

Academic Staff Development in Higher Education

EDITOR

K.S. CHALAM

The Concept of Academic Staff Development in Higher Education which was developed in Europe in the 1970s became operational in India after the National Policy of Education, 1986. However, there is no standard book that deals with the various theoretical and practical aspects of the whole concept. This book now fills this gap. The book focusses on the major theoretical perspectives of the concept. It also provides information on the experiments that have taken place before the birth of the so-called Academic Staff Orientation Scheme in India.

The theme of the book deals with all important aspects of higher education and provides the necessary information to teachers and academic administrators. It provides the necessary reading material for the Participants of the various courses organised by the Academic Staff Colleges in the Country. The material contains 21 contributions from internationally known educationists and experts and also copy-righted material from UNESCO, EARDHE etc.

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ACADEMIC STAFF DEVELOPMENT

Academic Staff Development in Higher Education

Edited by
K. S. Chalam



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TO
DR. L. BULLAYYA
AND
PROF. B. SARVESWARA RAO

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FOREWORD

For most professions, whoever intends to join any of them is deliberately trained over a considerable period. But in a number of countries this is not so in the case of higher education. One who has received higher education is considered to have the ability to transmit it to others qualified, if he has the sincerity and motivation. It is expected such a person would have as his models the best among his own teachers and internationally reputed teachers in his own subject. About the lives and methods of teaching of the latter, books and articles in journals would be available to the interested.

But it has been felt by a number of educationists that fresh M.A.s or Ph.D.s cannot be let loose among undergraduates or postgraduates, without being given orientation and preparation for teaching. Immediately after graduation in medicine or surgery one is not allowed to practise them independently. The moment one graduates in some engineering subject, one would not be allowed to undertake independent planning and supervision of works. Such graduates have to first successfully serve as interns or apprentices. One who plans to teach in a school has to go through a teachers' training college. Similarly, some maintain, before joining as a teacher in a college or university, an M.A., or, even a Ph.D., should be trained, or, at least, oriented for it.

Those who become teachers in institutions of higher learning should keep abreast with expanding frontiers of the areas of knowledge in which they have specialised and should also be exposed to the personal impact of well-known teachers and researchers from time to time. This is expected to make them fresh, up-to-date and inspired.

In accordance with what NPE 1986 laid down, the UGC formulated the scheme of Academic Staff Colleges. It was well-meant and adequately financed. Such colleges have been started in a number of universities. Dr. K.S. Chaiam has been directing the one in Andhra University. I am given to understand he is a brilliant and enthusiastic teacher and scholar, who has shown much promise and worthwhile achievement in his own field. He seems to have taken his assignment seriously and has been attempting to make his Academic Staff College a successful venture.

This collection of papers contains selections of papers by some well-known foreign experts, essays by some Indian scholars on relevant themes and other material. On the whole this volume would provide some valuable material to both those who are starting their careers in colleges and universities, as well as to experienced teachers. I hope it will be widely read.

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K. Satchidananda Murty

PREFACE

The Academic Staff Orientation Scheme of the University Grants Commission is perhaps one of the most ambitious schemes of the Government of India. Though some of the Western Countries have started similar schemes, the ASOS is perhaps the only scheme which has the largest and widest national coverage. The objective of the scheme is quite clear i.e. to motivate and initiate the young college and university teacher into the noble profession.

The second phase of the scheme through the introduction of refresher courses in the respective disciplines for senior lecturers has now started. Andhra University is one of the earliest in the country to start an Academic Staff College. In fact the University had pioneered by starting a four week training programme for the newly appointed lecturers in 1985, much before the UGC scheme of ASOS. The responsibility for this experiment was entrusted to Dr. K.S. Chalam.

The present anthology of articles was selected by the author to meet the needs of the Academic Staff Colleges. There are seven sections in the volume. The editor has taken care to include material relating to the three important components of the scheme. First, the theoretical foundations of the scheme both from the Western and Asian experiences have been provided. This is followed by the Socio-economic and philosophical perspectives in higher education. As the understanding of the process of learning is basic to a teacher, special contributions have been included in a separate section in this volume. The pedagogy of higher education has been provided in a detailed manner. The methods and techniques of evaluation in education are being given importance in the volume by incorporating a survey paper on methods of measuring academic achievement in the Third World countries. Academic administration and management of colleges and universities are examined by experts in the field in the last part of the anthology. A long term perspective of the academic functions of higher education is also given in the volume. Thus, the book covers the broad areas of the Academic Staff Orientation Scheme and hopefully will prove useful for the participants of the scheme.

I congratulate Dr. K.S. Chalam, the editor of the book for providing useful and relevant reading material both for the participants and practitioners of the scheme. I commend the volume to all those concerned with the promotions of quality of teaching in our colleges and universities.

(K. V. RAMANA)
(VICE-CHANCELLOR)

ACKNOWLEDGEMENTS

I am indebted to a number of institutes and to several friends who have helped me to bring out this book. The details of the sources from which the readings have been taken are given below. Some papers were commissioned exclusively for this volume.

I am grateful to the following for permitting me to publish their material: Prof. Brigitte Berendt, of the European Association for Research and Development in Higher Education (EARDHE), Frankfurt/Berlin, kindly agreed for her paper and other EARDHE papers to be published in this book. Dr. G.D. Sharma, Head, Higher Education Unit, NIEPA, New Delhi, permitted me to make use of the material published by him in his book 'Methodologies of Teaching in Colleges'. UNESCO, Paris, has authorised me to reproduce parts of their "Methods of Techniques in Post Secondary education", 1980.

We have requested all the writers to permit us to make use of their copyrighted material for the benefit of the teaching community in India. In a few cases it has proved impossible to contact the author/publisher and therefore we take this opportunity to offer our apologies. However, the sources have been duly acknowledged here.

As far as possible the original scheme of presentation of each paper has been kept unaltered with few editorial modifications. Notes to the papers, wherever presented by the authors, are appended at the end of each paper. Bibliographical references in most of the cases are made uniform, and have been detailed together at last.

Prof. K. Satchidananda Murthy, Vice-Chairman, University Grants Commission, New Delhi, has always been a source of inspiration for me ever since I joined the Andhra University. He advised me to pursue the experiment; Staff Orientation while delivering the valedictory address at our first experiment in 1985. He has now kindly gone through the entire draft of the present work and has written the foreword. I am grateful to him for this labourious effort.

Prof. K.V. Ramana, Vice-Chancellor, Andhra University, has provided great strength to all of us at the college ever since this was started. His preface to the book adds lustre to the life of this anthology. I thank him

for writing this preface. Prof. S.K. Khanna and Sri B.R. Kwatra of University Grants Commission have encouraged me to bring out this volume. My colleagues in the University and in the profession have helped me in many ways in the completion of the Work. I thank all of them.

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Introduction

The concept of Academic Staff Development in Higher Education was first developed in Europe. Different approaches have been followed in the developed countries to provide inservice orientation to their teaching staff working in the Universities. The UNESCO and other international agencies have also disseminated this idea across the countries of the world. The third world countries too have followed the idea as a pedagogical staff development and have also established specialised institutes to train and to provide inservice orientation to the teaching staff. The idea became popular in India after the National Policy on Education, 1986. Though some attempts have been made in this direction in some Universities including the Andhra University; it is only the University Grants Commissions' Scheme of Academic Staff Colleges that has given a national status to the whole programme. There are, however some unsettled questions in this programme which deserve attention.

The Academic Staff Development Scheme must base its orientation on certain philosophical and socio-economic perspectives of the whole system. It must also provide the links between society, development and education. It is necessary that the newly oriented teacher should develop a broad horizon in working in the higher education system from a global context and view the possible changes in the future. The teachers in the colleges and universities are also expected to know about the influence of the family and class on the academic achievement of adult students in a classroom. The students should also be convinced by the teachers that education is an investment and in a developing country like India, it is a social investment. The ultimate aim of any education, they must be told, is to uplift the society and aid the process of development. The readings on the 'perspectives in higher education' are concentrated broadly on the above ideas.

Understanding the learning process is a prerequisite for any ped-

agogical development. There are certain theories of learning which are relevant to higher education. The teacher in higher education must understand the group dynamics of adults so as to systematically manage the classroom situation. There are theories of anticipatory and participatory learning which need to be understood to make the profession of teaching a creative activity. The contributions to the section on 'the learning process' concentrate on the basic theories of learning.

Obviously, the important function of a teacher in higher education is teaching. He should know how to develop innovative methods of teaching; particularly the small group and the lecture methods in the colleges and universities. It is essential that the teachers in the higher educational institutions should be made to know the availability of various methods through which knowledge can be disseminated and new ideas imparted to the adult learners. The knowledge in the techniques of preparing a lesson plan will enable the teacher to deliver the lesson systematically and effectively in the classroom. Extension education has been accepted now as a social mission of institutions of higher learning in India. It has been used to make higher education socially relevant. It also comes under the broad category of 'project-method' of teaching. The teachers will be benefited if the contours of this method are known to them. This section on 'the strategies of teaching' is concentrated on the survey of the methods of teaching in post secondary education. They pointed out the diversity in higher education for experimenting with innovative methods of teaching.

After teaching, the teacher is expected to evaluate the performance of his students. He should know how to prepare test items and be in a position to evaluate his own courses that are offered in the college or university. It is necessary to study the recent developments in the examination system and the need for such a change in the university system in the country. An attempt has been made in this section to provide information on various aspects of measurement of academic achievement, evaluation and examination reforms.

The teachers in the colleges and universities are now entrusted with a number of administrative functions either as part-timers or deputationists. It is necessary for them to know about the working of a college or university system and the various administrative units within it. There are a number of techniques that an educational administrator is expected to employ in managing the institutions. It is equally true that universities are expected to play a research function and create knowledge. Further, there are a number of academic functionaries in

higher education who can be benefited by understanding the academic aspects of higher education. The section on 'academic administration' contains papers relating to techniques of academic administration in a long term perspective.

The above readings have been carefully selected to provide the newly recruited and the in-service teachers in higher education with the basic understanding of the context, purpose and the benefits of an orientation in various aspects of higher education.

THEORETICAL FOUNDATIONS

1

European Staff (Faculty) Development in Higher Education By the Year 2000

BRIGITTE BERENDT

1. Background

In May 1982 a working group with (Berendt as co-ordinator) Gasch, Huber, Ritter has started a project "Developing a Model of Co-operation and co-ordination in Staff Development within the Federal Republic of Germany" under the auspices of the German Association for Higher Education AHD. It was financially supported by the Ministry for Education (BMBW).

The following aims were formulated:

- To give an overview about all offers of staff development activities within the Federal Republic of Germany.
- To develop one or more comprehensive theoretical concepts as a basis for a common staff development programme of all units. (This might help to compare offers of different units for higher education and to lay open significance, approach and interdependency of a single course/workshop. It might also help to find out which topics are offered in parallel activities and what offers could be reduced. On the other side the absence of offers about other topics could be determined, in order to develop new ones).
- To develop and realize an additional organizational model as a basis for a long-term co-operation for units for higher education. The model should also contain evaluation procedures.

- To formulate references for the financial support of research into higher education (about 'neglected' fields and topics).
- To co-ordinate research.

In the meantime several activities—provided in the project design—could be carried out:

- a) An inventory on the basis of questionnaires and interviews about staff development programmes in practice and their problems.
- b) A questioning of experts about possible theoretical concepts for a comprehensive models. (Experts are colleagues working in the field of education/higher education, staff development, organizational development).
- c) A number of reciprocal visits by teachers of staff development courses within different universities and co-teaching. (This should help to find out in how far co-operative teaching within staff development (st.d) programmes is possible and what problems could occur.)
- d) Symposium: The results of (a)-(c) were discussed during a four days meeting. (Participants: Staff developers, experts, representatives of the Ministry of Education).
- e) Discussions about possibilities and constraints of an implementation with representatives of the Association of vice-chancellors (WRK), the Ministry of Education as well as with vice-chancellors and Ministries within the different state ("Bundesländer")¹ of West Germany.

(A first draft of the results as well as a plan of action is available with the author.)

During this project it was possible to deepen information on details about European staff development, which I had published earlier². I focussed on approaches and forms of co-operation.

In the following paper I should like to give a survey about different approaches to st.d. within Europe and discuss the preconditions of the existing st.d. programmes for integrating economic, social and other developments with respect to "Higher education by the year 2000" (see 2.1 and 2.2).

I do hope that already existing close co-operation between European staff developers³ can obtain some results from the participants of the EARDHE conference for their future work. A workshop during the conference might be helpful; I give some examples for questions to

be discussed (see 3).

2. Staff (faculty) development, 1983 within European countries

2.1 *Different approaches*

Staff (faculty) development programmes have been practised by units for higher education and/or staff development since 1970 within most European countries. Considerable efforts in this field were made especially by the Federal Republic of Germany, Great Britain and the Netherlands. There are, however, also interesting examples within the Scandinavian countries and Switzerland⁴. The programmes include—as a rule—consultancy, project work, offers of courses, seminars and workshops⁵ (often supported by self-study materials) for teaching staff members. The topics of courses/workshops are mostly basic questions of teaching and learning:

- "Aims, objectives"
- "Methods"
- "Teaching styles/skill training"
- "Learning situations, group dynamics"
- "Media"
- "Consultation skills"
- "Methods of observation"
- "Socialisation"
- "Motivation"
- "Oral examination"

They also include topics as "Course design" and "Revision and/or development of curricula".

Learning situations are very similar to one another, they include for instance: "Theoretical information about research in the field of higher education and reflection about the possibilities of transfer", "Learning by doing", "Feedback by video".

If we go into the details, we find that there are different approaches to staff development which can be distinguished by the focus and the general objectives. They may be called:

- a) The professional approach
- b) The research-orientated approach
- c) The personal development approach
- d) The self-help approach
- e) The comprehensive "reform of studies" approach.

"Improving teaching and learning in higher education" has a different meaning in each of these approaches: Courses and workshops offered differ as far as levels of teaching and learning are concerned. They can focus on;

the level of the individual interaction between teacher/learner,
the level of a session within a course,
the level of a course,
the level of a curriculum,
the level of the wider context (e.g. the political, financial and administrative realities), the so-called "framing conditions".

The different meanings of "improving teaching and learning" also influence topics, learning situations and supporting materials (for instance about games and simulations) as well as the importance of courses and workshops within a system of other staff development activities:

- a) The professional approach⁶ focuses on the qualification for all functions of staff members within the university (teaching, research administration and their university development) and their improvement. The levels of courses, curricula and "framing conditions"⁷ as levels of teaching and learning are included.
- b) Improving teaching and learning means a change in the context of university development and of structures of higher education.
- b) The research-orientated approach focuses on the improvement of knowledge about a certain area of teaching (e.g. "learner-oriented forms of teaching"⁸ in connection with a research programme within that field. The levels of sessions, courses and curricula are stressed.
Improving teaching and learning means a change of methods in the context of aims, content and framing conditions.
- c) The personal development approach focuses on the change of individual attitudes and individual teaching behaviour in order to optimize students' learning by better forms of instructions.⁹ The level of the individual interaction between teacher and learner is stressed.
Improving teaching and learning means a change of individuals and of their teaching methods.

- d) The self-help approach focuses on the improvement of teaching qualifications by an exchange of experiences among university teachers, which is enriched by information about projects and research into higher education¹⁰. The levels of sessions and courses are stressed.
- Improving teaching and learning means a change of methods.
- e) The "comprehensive reform" approach—as a rule—is practised by the units for higher education¹¹ and has to be seen in a close connection¹² to the reasons of their establishment during the reform movement¹². Consequently the main purpose is to use Staff Development Programmes as a strategy to motivate staff members, especially for the "Reform of Studies". All levels of teaching and learning are included.

Improving teaching and learning in that sense means a change of structures (e.g. modalities of participation of staff and students within university boards) of aims and content of the disciplines and of methods and individuals. Teaching and learning is seen in the wider context of framing conditions ("The function of higher education and universities", "Contradictions of interests of government and the employment-system" are consequently also topics of those programmes). See Table on p. 8

2.2 Preconditions of staff programmes for integrating economic, social and other developments with respect to "Higher Education by the year 2000"

When going into the details as for finding general aims and content of st.d. programmes I found out that within Great Britain and West Germany following "sources" are used:

- Experiences of "pioneers" about teaching staff members' and participants' needs and the practicability of concepts.
- Publication and research and projects within the field of higher education.
- Analysis of the needs of the institution and staff members.

Even in the cases, where curricula were developed as a basis for diploma courses (e.g. London, Surrey, CHS-Project) the offer of courses and workshops is corresponding to changing needs of participants as well as institutions. This is especially true for other st.d. activities as projects and consultations within West Germany. As a consequence we find, that there are necessary pre-conditions for

Table

	The professional approach	The research-oriented approach	The personal development approach	The self-help approach	The comprehensive "reform of studies approach"
	A	B	C	D	E
1. Institution relationship to other tasks	Institute for Agricultural development std=one function in a specific context	Pedagogical Institute Staff development project	President staff development Pilot/Scheme	Working group for h.e. (e.g. polytechnics in Bayern/B.W.	Unit for staff development or h.e. staff development one function beside others in h.e. (e.g. projects, research courses for students)
2. General objectives	— to prepare third world academics as members of university staff within their countries	— to improve the knowledge learner-oriented forms of teaching through a linked research programme. — to create a "network" of information between participants	— to change individual attitudes and teaching behaviour in order to optimize students' learning by better forms of instructions	— to exchange experiences — to get information about practice and research in h.e. — to participate in std. activities of the universities.	to use std. strategy for the "reform of studies" in the sense of promoting the democracy of university and society.
	Improving t/l=change of the organization of learning in the context of university development (individual and system-orientated)	Improving t/l=change of the organization of learning in the context of aims, content and wider context (individual orientated)	Improving t/l=change of individuals/the organization of learning (individual-orientated)	Improving t/l=change of the organization of learning (Individual-orientated)	Improving t/l=changes of structures, aims, contents, individuals (individual-and-system-orientated)

(Contd.)

The professional approach	The research oriented approach	The personal development approach	The self-help approach	The comprehensive "reform of studies approach"
A	B	C	D	E
3. Concerned functions of staff	— teaching — research — university development	teaching	=B	=B
4. General scheme/main activities	<i>pre-planned curriculum</i> — orientation phase (1w) — training courses (team-work, communication (2w)) — product-oriented courses (4w) — excursions (1w) — overseas secondment (5w) — a period of private study (6 months) (certificate)	<i>personal curriculum</i> — learning contracts — introduction (3d) — self-study materials ("catalogue") — audiovisual demonstration — workshops — "network" (certificate)	<i>single offers</i> — meetings — seminars (2-5d) — workshops (2-5d)	<i>single offers or personal curriculum</i> — workshops — consultation — cooperative projects etc — secondment — mostly certificates

(Contd..)

	The professional approach	The research oriented approach	The personal development approach	The self-help approach	The comprehensive "reform of studies approach"
	A	B	C	D	E
5. Courses/workshops	—course —curricula —wider context	—course —curricula	—interaction t/1	—sessions courses	—sessions, courses —curricula —wider context
a) main levels of t/1					
b) char. topics	— basic questions of t/1 — research management — university development (in the context of international mobility and development	"models of learner-centred teaching/self directed learning"	"self analysis" "role-conflicts" "teaching behaviour"	— basic questions of t/1	"basic questions of t/1 in the institutional context of curriculum and function of the university, also "interests and influences of government/of industry and commerce on higher education"
c) char. aims	— to impart knowledge — to transform knowledge into practice	— to change teaching behaviour	— to impart knowledge	— to transform knowledge into practice (in connexion with cognitive and affective aims)	

(Contd)

	The professional approach	The research oriented approach	The personal development approach	The self-help approach	The comprehensive "reform of studies approach"
	A	B	C	D	E
d) char, learning situations	— theoretical information and reflexion learning by doing	— information learning by doing	— training of teaching behaviour — group dynamics	— theoretical information and reflexion	— theoretical information and reflexion (discussion of transfer) — learning by doing (e.g. video-taped simulation of teaching situations new trend: application of the organization development approach)

for constantly integrating economic, social and other development with respect to a change of teaching and learning. I should like to give a few *examples* from my own country which tackle the following two key issues of EARDHE conference.

a) The employment system, and

b) Living conditions, ecology and social change.

a) -Courses/workshops/consultancy and projects in the context of developing curricula *in the field of further/continuing education* ("Fortund Weiterbildung") in order

to actualize academics' knowledge (e.g. of teachers, engineers, doctors of medicine, lawyers)

to prepare academics and non-academics for new fields within the employment system (e.g. work with developing countries, co-operation with drug addicts).

— Courses etc. concerning the revising of curricula in the sense of more "*practice orientation*" ("Praxisbezug"): Following the university laws of the 70s which stress universities' task to prepare also for a profession, it is tried to develop adequate forms of teaching and learning, which integrate professional reality (e.g. by interdisciplinary and disciplinary role plays and simulations, case-studies, visits, discussions with experts).

b) Courses/workshops about basic questions of teaching and learning (see 2.1) are often confronted with discussions about "*meaningful learning*"—a problem in the context of the often decreasing motivation of students to learn: Students often ask for the meaning of knowledge and "theory" for solving actual problems within our society (e.g. caused by different living conditions, ecology and social change). Teaching staff members are consequently in a conflict whether to follow the—often historical—"structure of the discipline" or to change general aims and content as well as methods of teaching (e.g. by introducing so-called "*anticipatory learning*"), in the sense of anticipating problems and solutions).

A new development seems to go on in some centres of the Federal Republic of Germany:

Beside st.d. activities, projects and courses are held which also include target groups, different from teaching staff members and correspond to societal needs

e.g. the so-called "*Wissenschaftsladen*" (science shops): individuals or groups from outside the university can ask for

help of university scientists in different areas (e.g. in the context of ecological problems, problems of the quality of working life)

- e.g. courses and seminars about "alternative technologies"
- e.g. courses and seminars about "problems of a region and ways of solution".

3. Issues for Discussions

- In how far is the survey about different approaches of staff development realistic and complete? (2.1)
- In how far are there preconditions of staff development programmes for integrating economic, social and other developments with respect to "Higher Education by the Year 2000"? (2.2)
- In how far could/should staff development programmes be changed with respect to the results of the conference? (e.g. general aims, content, methods, forms of national and international co-operation?)
- What consequences does the conference have with respect to research into higher education and to the meaning of improving teaching and learning ?

NOTES

1. For details about some of the main reasons: Berendt 1982.
2. See for instance Berendt 1980/1981.
3. The co-operation includes workshops for staff developers, exchange of materials, comparative studies, staff development seminars in developing countries. For details: see Ritter 1982, also Berendt 1981, Maleche Bogonko 1982.
4. E.G. Conrad 1981, Goldschmidt 1981.
5. Disciplinary or interdisciplinary.
6. For instance Riebel 1979. A similar approach seems to be practised in most of the British universities.
7. Such as change of hierarchical structures, participation of faculty and/or students in universities boards.
8. For instance: Flechsig, Burfeind, Schmidt 1978. A similar approach seems to be practised in the Netherlands and Switzerland with the difference that mostly Pedagogical research is used, if there was no specific research in the field of higher education. (see: Bloom/V. Dorp/Goldschmidt, 1981).
9. Modelversuch Ruhruniversitat Bochum 1981, also in Helsinki.
10. This approach is practised by polytechnic teachers, who invite colleagues from

units for higher education for lectures, seminar, course and workshops. (Fr.)

11. For details: Berendt 1981, Huber 1980.
12. Main aim: reform of the studies in the sense of promoting democracy within university and society by abolishing hierachical structures and by connecting theory (=sciences) to practice (=needs of the society needs of professions).
13. Ecksteinm B. Loos, (Hrsq.) Padagogische Fort bildung fur Hochschullehrer in : Gesellschaft f. Hochschuldidaktik, Zeitschr.f. Hochschuldidaktik 1981/H.1.

2

Pedagogical Staff Development in Higher Education

R.S. ADAMS
D. BATTERSBY

The problem

For decades, even centuries, it has been assumed that if teaching staff had a sound basis in their subject fields they would be sure to be good teachers. However, the evidence of the extent of poor teaching existing today warrants the conclusion that though mastery of subject matter is a necessary condition for good teaching, it is clearly not a sufficient condition. Furthermore as higher education has become more accessible and student numbers have increased, questions about cost and benefit, efficiency and effectiveness have been raised. These questions have become even more insistent when post-secondary education's contribution to national economic development is put under examination. To some extent these general concerns over investment in higher education come down to the conviction that the full potential of students in institutions of higher education is not being realized because inter alia the quality of teaching they are getting may be inadequate. The corollary is that the quality of teaching ought to be improved and to that end, effective provisions should be made for pedagogical staff development programmes to overcome deficiencies. (See: Academic Staff Development in Higher Education, UNESCO/ROEAP, 1985).

With the exception of the Union of Soviet Socialist Republics where

compulsory training for academic university staff has been the practice for many years, efforts elsewhere to provide for pedagogical staff development have generally been sporadic, piecemeal and tentative. In a number of Western countries during the affluent 1960s-1970s a variety of staff development units or centres were set up to suffer varying degrees of retrenchment as less affluent times arrived. Today, staff development provisions of different kinds are to be found in many institutions of higher education. Units and centres still exist in one form or another although their proper place in the academic community is still a matter of debate and argument. Some have been fully integrated in the organizational structure of their institutions, others lie somewhat apart. Some have achieved parity for their staff in the academic community, others have not. Some have been fully integrated into the academic process, others remain quite peripheral to it. In the absence of centres or units, programmes of one sort or another are often provided by other academics visiting experts or even external contracts. The offerings to be found within whatever organizational framework that exists may vary in terms of having explicit theoretical bases and in making use of high technology, advanced teaching methods, and sophisticated plant and equipment.

Any institution considering undertaking academic staff development is not faced with clear indications of what is best to do. The situation is, to say the least, confusing. During its relatively short history, pedagogical staff development in institutions of higher education has not been subjected to very intensive scrutiny. The insights and understandings that might come from the systematic study of existing practice are not yet available to either planners or practitioners. Accordingly, not only are answers lacking to questions about how and what to do to achieve best results but there is also little empirically based theory that can generate principles to guide policy-makers, planners and administrators.

Towards a solution

If the problem of improving teaching in institutions of higher education is to be solved, some measure of conceptual clarity and order is needed. This section of the Paper attempts to take some steps in that direction. To do so it sets out first to establish what is meant by pedagogical staff development and second to analyse pedagogical training systematically with a view to identifying component parts—i.e. the elements that together make upon any relatively complete staff

development programme. The objective is to derive from this conceptual analysis a general model in which the main working elements are seen in relationship to each other so that questions about what to do, why to do it and how to do it, can at least be addressed relatively comprehensively.

The paper then is essentially concerned with the systematic planning design and implementation of staff development programmes. To this end it addresses the question—what needs to be done to put in place effective provisions for staff development?

Before that question can be faced however, it is necessary to come to terms with what is meant by staff development in general and pedagogical staff development in particular and what staff development programmes may entail.

Towards definition

One UNESCO publication put it this way:

Discussions of staff development often beg the question of what staff development is. It is generally agreed that most universities have regard for and make provisions for the development of the academic competency of their staff. Provisions for sabbatical leave, study leave, attendance at conferences, visiting experts, seconding to research projects, content based in-service training, and public and government programmes are all part of the academic staff development system. As well, many departments provide for discussion and study groups, the circulation of relevant literature, staff meetings and substantive reviews from time to time.

Most universities have regard for and make provision for the development of their staff member's skills in research. Research grants, research project and research contracts serve the dual purpose of (hopefully) yielding results and providing opportunity for learning and personal development.

However, a comprehensive definition of staff development does not stop with academic knowledge and research capability alone. There are three other aspects characteristically included—all three are less well regarded and provided for than the other two. They are: teaching, administration and community service. They feature in the definition because it is considered that the tasks of individual academics include responsibilities in these areas also. That they teach students is self-evident. Again, as universities grow and compartmentalize,

administrative responsibility tends to increase and diffuse through the system, more committees are formed and competency in managing their affairs is required. Furthermore, as universities develop closer and closer links with their societies, the necessity grows for staff members to become skilled in coping with the world outside the ivory tower.

A comprehensive definition of staff development then would include provision of the means for the development of individual competency in: (i) academic knowledge and understanding; (ii) research skills, procedures, design and applications; (iii) teaching; (iv) administration; (v) serving the community (emphasis added).

from Academic Staff Development—Higher
UNESCO ROEAP, Bangkok, 1986.

The pedagogical definition of staff development then is essentially a matter of the provision of the means whereby academic staff can upgrade their teaching capability, be that teaching concerned with large groups, small groups or individual tutoring and student advising.

Strategies of pedagogical staff development

Various devices have been used in attempting to improve the teaching capacities of staff and a variety of 'instructors' have used a variety of methods—with, it must be admitted a variety of results.

In all of this, two contrasting administrative strategies are discernible. They can broadly be described as 'top down' and 'bottom up'. The former, emanates from some authority within the institution; tends to be by decree and on the basis of judgements by superordinates of what subordinates need. Induction programmes for new staff are often of this kind and are predicated on the assumption that those who have had experience know what is best for those who have not had that experience. By contrast a 'bottom up' strategy permits or encourages the 'need for pedagogical staff development' to surface amongst those who have the need. Staff either volunteer the kind of difficulties they are having prior to the constructing of programmes of courses appropriate to their specific cases. This approach is susceptible to both large scale and small scale treatments. For example, needs assessment can be first carried out for a given department of faculty on a systematic basis with appropriate general programmes following. Against, the needs assessment and subsequent programme may be the result of

dialogue between a professional academic staff developer conferring confidentially with an individual academic who has sought assistance. Implicit in these two approaches are two distinct roles—the professional administrator social-scientist and the professional counsellor 'animateur'.

Obviously, the learning principles that apply in any staff development programme that sets out to provide education about teaching at the higher education level are those that also apply to any educational situation. It is the case that motivation is equally important. It is the case that the mode of communication needs to be appropriate to the topic, the recipients and the situation. This means that lecturing may be suitable in some contexts but not in others. Similarly, face to face communication may be desirable sometimes and at other times may not be. In some situations correspondence or distance education may provide the best means. Again some media may also be more appropriate than others in a given context. Experience has shown that academics do not readily respond to the opportunity to undergo pedagogical staff development unless they have an identifiable need, unless the form and content of 'instruction' is acceptable and unless the legitimacy of the 'instructors' is established. A number of well intended efforts have foundered because of a failure to (i) tailor the development process to the needs of those undergoing it; (ii) work at the personal and individual level in favour of a mass approach; (iii) use personnel whose experience is relevant to the University context (rather than perhaps the school context); and (iv) be concerned with other than relatively trivial pedagogical matters and at a superficial level.

It follows from all this that pedagogical staff development, as it is used here, is not to be envisaged simplistically as one or two lectures or demonstrations given to reluctant academics who have been cajoled or coerced into unwilling attendance. Rather what is implied are programmes; which of course will vary in context and comprehensiveness from setting to setting but are essentially concerned with addressing the identified needs of staff, efficiently and effectively, in a way that they will feel to be acceptable and beneficial.

Elements

The implication of the preceeding paragraphs is that the actual determination of what the appropriate pedagogical development task

should be dependent on a number of factors. Clearly, it depends on the nature of the situation pertaining at the time—the current capability of staff, the capacity of ‘educators’, the availability of resources. In all, some 11 elements are envisaged. They are: rationale, task, method, personnel, needs assessment, equipment, plant, co-ordination/management, time, budgeting/scheduling, finance and context.

Justifying the elements

The first step towards achieving a model requires the presentation of a case for justifying the selection of elements.

RATIONALE—As a starting point, it seems reasonable to argue that education is by nature, purposive—whenever an educational function is undertaken it is undertaken with the intention of achieving some educational purpose. Pedagogical staff development as an educational activity is also purposive and sets out to achieve objectives whether these objectives have been stated explicitly or not. What the objectives are and why they are adopted provide the reason for the programme—its rationale. The existence of (overt or covert) objectives serves to both establish the reason for the programme and to give direction. More importantly, objectives once stated imply other requirements that must be met if the objectives are to be realized. For example, if the objectives were to improve the skill of academic staff in the use of distance teaching techniques, resources would have to be provided, time set aside, the training co-ordinated within the academic schedule and so on.

TASK—By definition, any staff development programme implies activity—something must be done, plans must be operationalized, intentions converted into tasks. This holds good irrespective of the size of the programme, be it a one session introduction into the use of ‘spreadsheets’ or a lengthy series on creating a mastery learning based curriculum.

METHOD—In their turn, tasks when undertaken entail procedures or methods some of which are likely to be more suitable than others. For example, a programme on group seminar techniques will be less credible if delivered through lectures only while skill training programmes are handicapped if opportunity for supervised practice

is not provided. Pedagogical methods however, are many and various, including for example: didactic methods; inductive/deductive strategies; Keller plan; discovery learning; role modelling. They may employ direct or indirect communication methods; be used in large or small groups; or entail practical activity, experiments demonstrations, simulation games. In general, method, as a generic term, covers all those aspects that comprise strategies of teaching and learning.

In order to use the Methods to undertake the Task in accordance with the original rationale, personnel are required—both as contributors or executors (Personnel A) and as recipients or users (Personnel B). It is axiomatic that the efficiency and effectiveness of any staff development programme depends on the competencies of the contributors—their quality and quantity (given the number of recipients) together determine how well the programme is likely to succeed.

PERSONNEL—It is even more axiomatic that the efficiency of any staff development programme depends on (i) the existence of recipients; and (ii) the recipient's educational readiness. Rather surprisingly, a number of staff development projects have faltered and even failed because they have not attracted the personnel for whom they were designed. Others have failed because they were pitched at a level beyond the comprehension of recipients (e.g. on advanced computing or statistics). Others have failed when information derived from the study of children and schools has been conveyed too simplistically for discerning academic audiences.

NEEDS ASSESSMENT—Implicit in the argument above is the idea that there ought to be a match between what the recipients need and what is provided. It follows in term that diagnosis of needs ought to be as accurate and relevant as possible. The more the programme caters to salient staff needs, the greater the likelihood it will be patronised and appreciated.

EQUIPMENT—Depending on the programme, the contingent need for equipment may or may not be extensive. However, equipment may be quite critical in determining the success of a given programme. This is obvious enough when equipment like computers, overhead or slide projectors, audio or video tape recorders are themselves the focus.

When they are used as aids to other programmes, their failure or inaccessibility may be quite devastating.

PLANT—Any staff development programme usually requires at least one location. As long as that location entails buildings of one sort or another plant becomes a relevant component. Whether the required plant is available at the time and whether it is suitable for the purpose are two important matters that have to be resolved.

CO-ORDINATION/MANAGEMENT—Enough has been described above to make obvious the contingent need for effective co-ordination and management. To ensure that the operational elements (Task, Method, Personnel, Needs Assessment, Plant and Equipment) come together to achieve the purposes intended (Rationale), co-ordination and management are both required.

TIME BUDGETING/SCHEDULING—Closely related to co-ordination/management is time budgeting or scheduling. Not only should the span of time devoted to the Task be enough achieved but also the phasing of activities should be consistent with educational objectives. As well the timing of the programme as it relates to availability and willingness and to the overall requirements of the academic year is important.

FINANCE—At a level beyond the elements specified above lies finance. In and of itself money is not sufficient but without adequate funding any staff development programme is handicapped. Whether costs are direct or indirect, their calculation prior to the event is necessary for efficient administration of any programme.

CONTEXT—The next element, though less obvious than the preceding ten is probably more crucial than any. It accommodates political aspects—the distribution of power and the benefits of having the support of the power structure and the risks of violating power conventions. Its focus is the relationship between the programme and the variety of contexts on which programme activities may impinge. At issue here is not only the question of successfully accessing and providing for the designated target group but doing so within a politically secure and supportive environment.

For convenience two contexts may be recognized. The first context

is within the institution (Context A) and comprises the internal power structures of the institution and the status and recognition that may or may not be given to any staff development programme. The second is the external context (Context B) comprising the various groups agencies of organizations linked to the programme and to the target groups. The extent to which the staff development programme is seen as credible inside and outside the institution depends on the extent to which the various constituencies accept and support it. The necessity to 'tough bases', 'marshall support' and 'keep channels of communications open' cannot be overstated.

EVALUATION—There is a further element though not essential in the general scheme of things (in that failure to provide for it may not prejudice the programme) which is acknowledged widely as valuable. Evaluation enables some check to be kept on the efficiency and effectiveness of any programme. As a monitoring device it can be useful when questions of accountability, performance and impact arise. Its absence may handicap a programme and its presence may help vindicate it.

Planning

The 12 elements as they are listed above can at least serve as a checklist for planners of academic staff development programmes. As such, the elements focus attention on critical aspects that need to be covered in the course of designing and preparing for the particular programme. They provide scope for questions such as:

1. What are the 'needs'? (Needs Assessment)
2. What is the specific target group? (Personnel A)
3. Given the needs and target group
what objectives should be set to
meet the needs? (Rationale)
4. What should the programme contain? (Task)
5. How should it be delivered? (Method)
6. Where is the money coming from? (Finance)
7. How much money is there?
8. What instructional personnel are
needed? (Personnel B)
9. What equipment will be required? (Equipment)

10. What plant is needed? (Plant)
11. How long should the programme last? (Time Budgeting)
12. When should it be timed for? (Context A)
13. Have the appropriate approvals been given (from Authorities, Unions etc.) (Context B)
14. How will the programme be greeted by the recipients' patrons e.g. industry, the profession etc.
15. What evidence is there that the programme succeeded or not? (Evaluation)

Behind each question lies a number of other questions of greater or less sophistication. For example: (i) what confidence can be vested in the needs assessment—is it an 'inspired guess' or the result of empirical study and if so, how reliable and valid is it? (ii) what pedagogical grounds are there for believing that the needs will be met if particular objectives are selected? (iii) what empirical evidence is there for believing that the task as specified will achieve the stated objectives? (iv) what warrants the use of the methods selected?

To some extent such questions represent no more than a basic outline of some of the day-to-day concerns of policy-makers, administrators and planners. Making them explicit here may be doing little more than stating the obvious. Nevertheless, it does seem to be the case that the literature on staff development has not made any great attempt to identify the essential elements for programmes in staff development or for that matter to make any connection between them and the conditions necessary and sufficient for programme and development.

However, to return to the catalogue of elements—while the logic underlying the presentation above might imply that there is also a logical sequence to follow when planning or implementing a staff development programme, in fact, this is not necessarily the case.

Each of the elements in its own right has the potential to subvert the whole enterprise, if its condition is not right for the purpose it is supposed to achieve. For example, without adequate personnel programme will fail; without essential equipment it will fail; without a secure contextual power base it is likely to fail; and so on.

It is also the case that each element has the potential to affect every other element. The amount of finance available early limits the scope of any programme. The availability of particular kinds of equipment may affect the methods that can be used and if needs have not been

assessed accurately then 'recipients' may see no reasons to participate.

A model

It follows then that whatever model is derived using the elements above it has to be dynamic with the elements recognized as both (i) variable; and (ii) interrelated. Objectives, for instance can not be held in isolation and divorced from resources (plant, equipment, personnel, finance). Personnel cannot be regarded in isolation from Task and Method.

When the model is applied in the real world, necessarily all the separate elements will be to be 'loaded' appropriately for the specific situation. The condition of each will need to be specified in accordance with conditions prevailing in that particular institution and that particular culture at that particular time.

Figure 1 contains an attempt to represent the model graphically and should be read with such a qualification in mind.

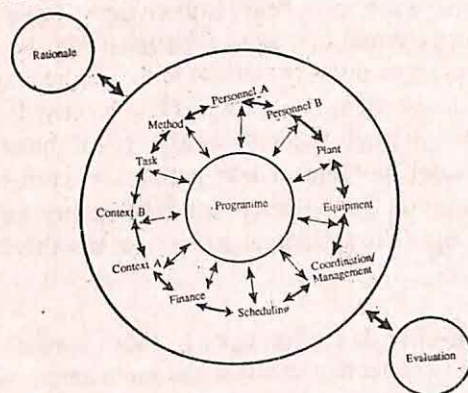


Figure 1. Pedagogical staff development: a model

Figure 1 groups together the components listed in the previous paragraphs. Most appear in the large central cluster and are linked by arrows to indicate their mutual interdependence. Rationale lies outside and above simply because of its overarching relevance to the design development and operation of any programme. Evaluation also lies outside but below implying some degree of summative evaluation.

All arrows however, come together at the centre where the programme exist either as a plan or a practice. In this sense, programmes can be conceived of as broadly or narrowly as desired.

At the most comprehensive level, 'programme' may refer to the total staff development operation of the institution with all its structural and functional features. At the least comprehensive it may refer to a one-half hour session provided for only one staff member on a very limited topic. Necessarily the degree of comprehensive forethought and attention that will need to be given varies in accordance with the size and a complexity of the operation under consideration.

Staff development programme types

The model as it has been presented so far reflects a mechanistic rather than organic approach—even though a dynamic one. The earlier discussion also indicated that the elements are to be considered as variables. Attention now turns to the question of variability within each element with a view to identifying different types of staff development programmes.

Again it seems necessary to begin with a relatively general approach in order to avoid cultural bias as much as possible. As a first step it is appropriate to argue that any element in the model may vary in two basic ways with respect to its extent and complexity. Because extent and complexity are likely to be correlated, it will be convenient for the sake of model building to take extent and complexity as one combined dimension. First however, it is necessary to establish the credibility of the 'extent/complexity' characteristic for all of the elements.

RATIONALE—Evidence suggests that staff development programmes may cover any or all of four main areas—viz. academic (pedagogical) administrative research community service. Within those, they may again be subdivided both in terms of the specific focus, e.g. 'lecturing', 'filing', 'proposal writing', 'public speaking', and in terms of the number of provisions existing. The rationale associated with a staff development unit or centre that has a considerable number of permanent full-time staff is likely to be much more extensive and complex (and comprehensive) than will be one associated with a 'one-off' provision made possible by the brief visit of an overseas expert.

TASK—The specification of task can be extensive and/or complex within each of the four main areas—academic, administrative, research and community service. Even within any one area, complexity and

extensiveness are possible. For example, staff development may be undertaken for all or few of the subjects featuring in the academic curriculum, it may cover all or few of the teaching modes lecturing to assignment marking, and it may range from a theoretical programme on adult to helpful hints on the use of overhead projectors.

Methods—The methods entailed may also be simple, comprising no more than information news sheets issued from time to time, or complex comprising a range of methodologies involving high technology such as the use of teleconferences or satellites.

Personnel—Personnel whether A or B can be many or few, diverse or specialized in the competencies that are used or catered for.

Plant and equipment—Similarly the programme may have locations throughout the campus or be confined to one. They may also call on relatively few kinds of equipment (a blackboard and chalk) or a range and variety that extends as far as the most sophisticated high technologies.

Co-ordination management—Co-ordination and management practices may be relatively simple, confine to the department or even individual level (e.g. researcher) or fully integrated within the formal structures of the institutions. Managements may be part-time—voluntary and temporary; or full-time-appointed and permanent.

Scheduling—Scheduling may be simple, confined to one course at the beginning of the year or new staff. Or it may be complex with a variety of activities carefully set into gaps in the academic programme and designed to anticipate particular events in the institutions' calendar.

Finance—The extensiveness or lack of extensiveness of financial provision needs no elaboration. The complexity of finance as a variable however, probably resides within the budgetary procedures that are used to make the necessary funds available e.g. levies on departments, returns from sales of goods and services, grants.

Contexts (A and B)—Given that the two contexts are defined as the internal and the external loci of power respectively, extent and complexity refer to how the staff development programme is integrated

into the two power systems. In many cases, staff development programmes are treated as quite peripheral to both. In some, power bases for the staff development programme have been established throughout the administrative structure. In this case representatives are to be found in all the major and many of the minor forums of the university. The intra-university contextual linkages may be extensive and their structure complete.

Evaluation—Finally, evaluation can be cursory and even casual. It can also be complex, calling on sophisticated contemporary methods. It may be extensive, applied to all staff, all students and all programmes. It may correspondingly be confined solely to procedures for examining students.

If all elements in the model can be regarded as variables (at least to the degree that they are extensive and complex), several theoretical possibilities follow. First, all elements are interrelated and tend to vary in the same direction. Second, groups of variables may be mutually dependent and vary concurrently but not necessarily in the same direction. The possibility that all variables are not interrelated was not admitted in the earlier argument but is theoretically possible.

A cursory examination of the descriptions of variability in the elements above would lend support to the idea that the variables are mutually dependent and it would follow that wherever one variable is found to be high on extent and complexity, the others will tend to be high also. Similarly low variability will tend to be found in all variables at the same time.

However, in the absence of any empirical evidence on the characteristics of staff development programmes, the issue remains theoretical. Nonetheless the logical possibilities above are exhaustive i.e. (i) all elements may covary consistently in the same direction; (ii) some elements may covary consistently in the same direction; (iii) no elements vary consistently in the same direction.

Figure 2 contains four profiles providing illustrations of archetypal systoles. For effect, in each case an average level of variability has been assumed above which high (or higher) levels extent and complexity are to be found and below which are found lower levels. In all cases the upper limit is set as a presumed optimum and the lower limit as a presumed minimum.

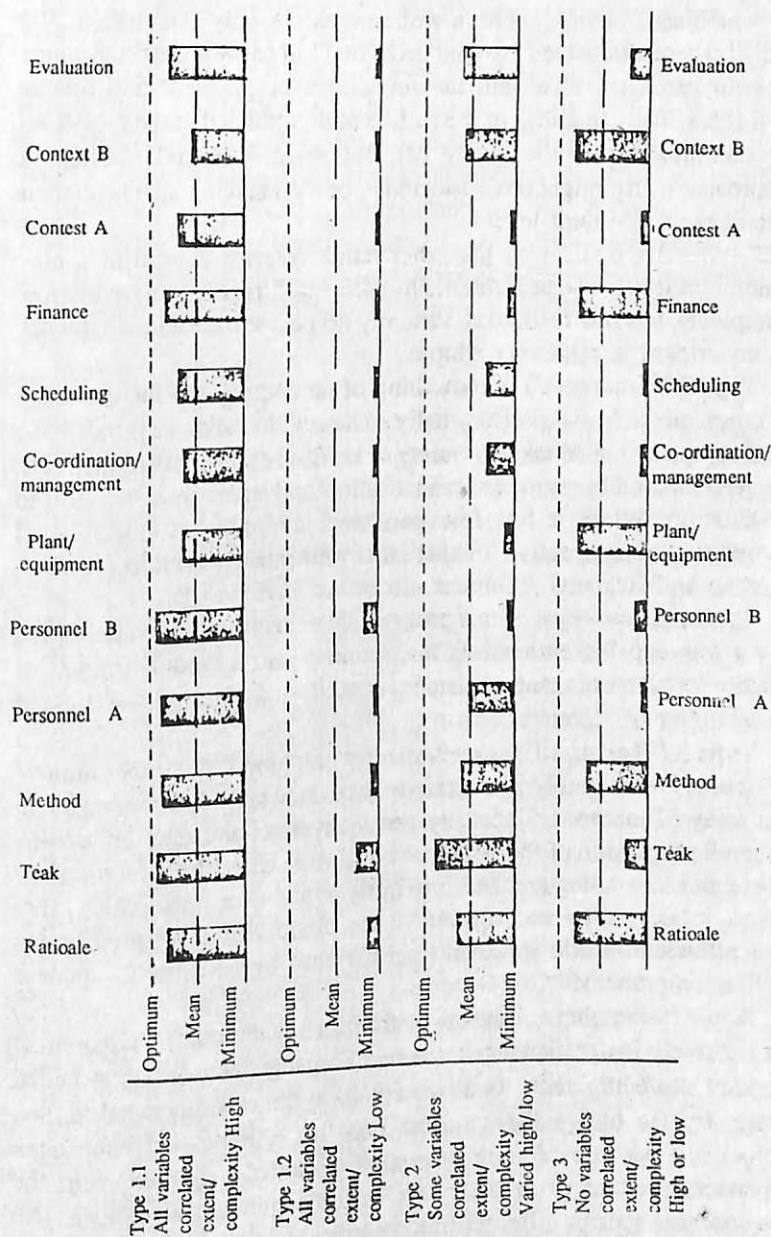


Figure 2. Staff development programmes: hypothetical archetype profiles

Type 1.1 ('Established') in Figure 2 is indicative of an institution in which staff development is well and extensively established. Not only is there extensive financial provision but as well the programme has an extensive base and an abundance of physical and human resources. The capability of the staff is high, reflected in the high level of complexity and the extent of: Rationale, Tax and Method. It approaches what might be considered to be the ideal in that all elements are at their optimum level.

Type 1.2 ('Basic') on the other hand operates overall at a near minimum level. The programme has few staff, reaches relatively few recipients, has few resources, virtually no power base and what work it undertakes is relatively simple.

Type 2 ('Emergent') is something of an enigma. On the one hand it is academically and professionally advanced. Its rationale is extensive and complex, it undertakes a variety of tasks, uses a variety of methods, is seen as credible outside its institution and gives due attention to evaluation. While it has few personnel and reaches but a small proportion of prospective 'clients', it is well-managed but its physical, human and financial resources are rather slight.

One might conceive of this programme as relatively new, promoted by a few capable enthusiasts but running into a certain amount of institutional inertia and resistance manifested through the limited availability of resources.

Type 3 ('Restricted') is even readily explained. The programme's rationale is reasonably good it undertakes few tasks but does so using an array of methods. There are not many staff and they only reach a small proportion of the potential recipients. Co-ordination/management and scheduling are therefore fairly straight forward. On the other hand, money, plant and equipment are plentiful and the programme has attracted outside approval (and may be) support. Involvement is quite comprehensive.

Again one might envisage an institution in which staff development is relatively insignificant but where an outside sponsor has provided money and equipment. As a consequence, the task has been defined narrowly (to oblige the sponsor) and the A Personnel have been appointed because of their specialist technical expertise (with the sponsors product or in line with the aid agency's ideology). The programme (perhaps by definition) appeals only to a few members of the institution's staff and is politically secure internally only to the extent that money and patronage result for the establishment.

The model leaves unanswered a number of important conceptual points—for example, (i) by what criteria are levels determined? (ii) are intervals equal so that a high 'score' on one variable equates with a similar score on another? (iii) what are the measurement criteria? and (iv) how might reliability and validity be established?

However, for the purpose of the present paper the Types draw attention to the prospect of exploring the existence, stage of development, persistence and perhaps effects of staff development programme by empirically examining configurations of variables in search of patterns of association and subsequently, explanatory power.

Programme archetypes

Nonetheless as an alternative and in the absence of empirical evidence it is not unreasonable to conjecture over interpretations of staff development programmes and what might or might not 'cause' them to flourish and be efficient and effective.

At the everyday level it is often argued that if resources are provided, then efforts will be crowned with success. With sufficient money, adequate item, and a staff establishment, any programme will work well—it is said. The implication is that certain variables or groups of variables may be of key significance in the success or failure of a given programme. In fact, the earlier argument rejected this, arguing that (i) in so far as any element was necessary for the success of a programme, in its absence the programme would fail; and that (ii) all elements were to some extent necessary (except perhaps evaluation).

There are however, two conceptual strategies that might lead towards an explanation of how programmes do or do not succeed, other than an empirical testing of the 'model' and its elements.

On the one hand it might be possible to detect in the relationships between the elements key conditions that, given the states of the elements themselves, might explain or predict success and failure. On the other hand it might be possible to undertake a second level analysis that seeks a meaning beyond the separate variables themselves—a kind of meta analysis.

Relationships between elements

In the early paragraphs of this section the point was made that all elements were interconnected and that the state of one element had contingent effects on another—for example, if staff versed in the use

of technology were not available as instructors, then the (new) technology was likely to lie idle. This implies that in some systems of staff development the elements are better connected than in others. That in turn suggests that some systems may have mechanisms that ensure that the connections are made and the various contingencies are taken into account. Such mechanisms may consist of 'management plans' or sets of 'operating procedures' or 'procedural conventions' involving monitoring and evaluation or organization structures (of committees and sub-committees where contingent issues arise) or combinations of these. Whether they exist and how they work is an empirical question. However, it does seem reasonable to argue that the greater the extent to which the elements necessary to a staff development programme are co-ordinated, the greater the likelihood of survival and success. Similarly the greater extent to which they are fragmented, the less the likelihood of survival and success.

Such a proposition should not be interpreted merely as a matter of administration management and organization. Clearly too for success (if not survival) there should be continuity between the Rationale for the programme, the Talks designed (supposedly to achieve the Rationale) and the Methods used (supposedly to accomplish the Tasks). Similarly the connections should be direct and unambiguous between Needs, their Assessment, Tasks and Methods used to meet the needs.

Meta analysis

In one of the very few articles dealing with the theoretical foundations of staff development and higher education, Yorke (1977) after briefly reviewing three models, arrives at his own meta interpretation of types. It is worthwhile to review both. The models to which Yorke refers are (i) the Management model of Bristow (1973); (ii) the shop floor model; and (iii) the partnership model.

The Management model would seek to, 'examine a teacher's functions to consider present and future roles and to formulate a training programme to meet the needs of the institution' (emphasis added).

Yorke points out that the attempt to accommodate both individual and institutional needs simultaneously, introduces potential conflict between 'prescriptions' and 'support' and the subordination of individual interests to institutional ones.

The 'Shop Floor' model is attributed to Hannafor (1974) and

emphasizes 'user need' and relatively unconditional support from the outside which, as Yorke points out, requires a massive act of faith from management.

The 'Partnership' model (Piper 1975) attempts to reconcile the interest of both staff and management with agreement reached mutually over accommodating to each others' needs.

Yorke favours the last model, and argues that 'only a genuine Partnership in staff development can offer the prospect of a lasting contribution to a sensitive, stimulating and successful institution'.

However, Yorke's particular contribution to the present discussion is his use of the two concepts 'reflexive' and 'normative' to identify two basic types of programmes—those that are designed in response to perceived needs of the individual teachers in contrast with those designed to promote the interests (needs of the organization).

It is this last distinction of Yorke's that provides a point of departure for a further modest exercise in meta analysis. Two presumptions are made. The first is that Yorke's bipolar concepts are legitimate and that in some circumstances reflexive will be functional, in others normative will. For example, an institution to provide (normatively) the widespread use of say mastery learning was functional in the case of the Sukhothai Thammathirat Open University because of the logistic posed by its 400,000 students. However, in an elderly European university, such a prescription would be dysfunctional because of the staff opposition it would attract. By the same token the advent of a new technology to be used universally (say a multi-purpose telephone exchange) would warrant a normative approach which prescribed training programmes for all users, irrespective of status.

The second presumption is that there may be other such meta dimensions that taken in conjunction with the normative-reflexive bipolar dimension may provide further explanatory power. One has already been mentioned—technology. Existing programmes may make use of high technology. Some use it heavily, some not at all. It seems as if technology brings with it an ethos that carries its own persuasion. For example, staff who have previously resisted pedagogical staff training in lecturing techniques may readily accept training in the use of video disc, teleconferencing and the like—presumably because: (i) the technologies are identifiably complex; (ii) they are also contemporary and exciting; and (iii) there is no expectation that academics should have absorbed the capacity to use them in the course of their earlier education.

Summary

This paper has mainly been concerned with undertaking a descriptive analysis of development so that the elements critical in the planning and running of any programme might be identified. The assumption made was that any one of the elements was necessary for success and collectively all would be sufficient for it. Following the specification of the various elements (Rationale, Task, Methods, Needs Assessment, Personnel, Plant and Equipment, Co-ordination/Management, Time Scheduling, Finance, Context and Evaluation) an attempt was made to formulate a model and to use the model to conjecture about types or archetypes of programmes. The section concluded with a more specific examination of 'pedagogical' elements related to teaching and learning. In the process some 'principles' of effective pedagogical practice were surfaced.

Report on The Training Programme for Newly Appointed Lecturers in Andhra University

K.S. CHALAM

The university system in our country does not insist upon the professional preparation of teachers. The Education Commission, 1964-66, has also mentioned about this problem in their report in detail (pp.153-156). It has pointed out that the University teacher has no opportunity to study the syllabus, plan lectures, consult the head of the department or other senior colleagues on the academic programme and on methods of teaching. The age old tradition of giving lectures and dictating notes has passed on from generation to generation without any creativity in teaching.

The young teachers who enter the profession without any training do encounter with many initial difficulties. During preparation, some of them are anxious about the lecture content and inadequacy of their own knowledge in the subject. They concentrate quite often not on how to deliver the lecture but only on the content. This is because of the fact that they have not been exposed to the classroom situations before. Under these conditions it is difficult to satisfy the five-fold responsibility of teaching, learning, research, evaluation and extension work of a university teacher. The situation needs to be tackled. This can be done in two ways. One: the teacher must be made to acquire more and up-to-date information on the subject to make the classroom teaching effective. Two: the teacher must be initiated to equip

with various skills in methods and techniques of teaching so that he or she can combine them with the lecture method so as to make the process of learning by the students more interesting and useful. Unfortunately, no university in the country seems to have developed a training programme for the university teachers.

Keeping in view the large number of newly appointed lecturers in Andhra University, the University has initiated a training programme for the teachers. A detailed training programme with content containing the objectives of the education and the role of the teachers, techniques and methods of teaching and evaluation, practical training with supervised lessons etc. has been prepared by me with the assistance of a team of experts. The University Grants Commission has been approached for financial assistance to conduct the 4 week programme. The University Grants Commission has readily agreed and asked us to go ahead with the programme. We have produced elaborate reading material for the participants along with the lecture notes supplied by the Resource Persons who have been drawn from various Universities in the country along with our own senior teachers. In addition to the prepared lecture notes and hand-outs, we have also recorded the presentations and deliberations of the programme. The programme content, the detailed programme, summaries of the presentations, along with the recommendations are produced in a report form for the benefit of the teachers, administrators and researchers. The following is a summary of the report.

Objectives of the Programme

The major objectives of the programme are as follows:

1. to acquaint the newly appointed teachers with the objectives of higher education and the role of the teacher in it;
2. to expose the teachers to the mechanics of process of learning and motivation;
3. to orient the teachers with the latest methods and techniques of teaching which enable them to improve their ability of classroom instruction;
4. to train the teachers in skills of structuring and planning of their lectures including preparation of hand-outs;
5. to make them aware of various techniques of classroom

management that lead to efficiency in teaching; and

6. to train the teachers in the feed-back techniques, preparation of question papers and assessment of achievement of the students, to improve the classroom instruction.

The following programme has been designed to attain the above objectives.

The content of the programme

1. Objectives of higher education Linking education with needs and aspirations of the people. The role of teachers in higher education —professional ethics.
2. Psychological theories of learning—process of learning— theories of motivation—creativity in teaching.
3. Method and techniques of teaching—various types of lecture —dialogue—lecture by step by step method—problem solving—sequential method—and other alternative methods.
4. Learning to lecture—helping students to learn from lecture— structuring of a lecture.
5. Learning from group discussion—Buzz group—brain storming —controlled discussion and other multi-traffic discussion techniques - seminar and the group discussion—tutorials— student counselling.
6. Preparation of hand-outs-use and abuse of hand-outs - techniques of preparing hand-outs. Collection of information and the use of library in teaching learning process—study difficulties.
7. Laboratory work—simulation techniques—Preparing students for laboratories—the effective use of laboratories for teaching science subjects.
8. Audio-Visual aids and techniques of teaching—using aids according to need and purpose.
9. Various feed-back techniques—Evaluation and assessment— techniques of preparing question papers and question banks— Evaluation and improvement in class-room teaching—curriculum planning and evaluation.
10. Educational administration—University statutes—Rights and Responsibilities of teachers—Functioning of the academic

bodies.

11. Practical work by teacher participants—Supervised teaching practice—Simulation and micro teaching techniques.

Delivery of the Programme

As the training programme was organized with the financial assistance of the U.G.C. the University has taken special interest in the programme and deputed all its, newly appointed lecturers. Forty-nine lecturers belonging to different faculties (out of fifty-eight newly appointed lecturers of the University) have participated in the programme. The programme was implemented after thoroughly revising the original proposal on the basis of the remarks made by Prof. Rais Ahmed. The revised programme content is divided into four broad categories viz., objectives of higher education and the role and responsibilities of teachers, the methods and techniques of teaching and evaluation and assessment techniques. The programme is given in a phased manner for four weeks. In the beginning lectures and discussions on objectives of higher education were arranged. Lectures, discussions and demonstrations on methods and techniques of teaching were undertaken after the completion of the first part of the programme. Demonstration lessons by the participants to test the communication and classroom management abilities were put on before the techniques of teaching were taught. It was thought that a pre-programme demonstration and a post-programme demonstration by teachers would indicate the change in the teaching skills of the participating teachers. It is observed that there is considerable change in the acquisition of teaching skills and methods of teaching by the teachers. However, there are some teachers who have been teaching in their respective departments for quite some time as research scholars who incidentally exhibited some ease and facility in the delivery of the content. This does not mean that the training is irrelevant for them. The training has provided them an opportunity to refine their skills and learn alternative methods of teaching. The participants themselves have agreed that this programme has provided them a unique opportunity to learn and practise the alternate methods of teaching. However, it is observed that most of the teachers are interested to learn the verbal and communication skills rather than the exposition of the content. All the participants were unanimous in their opinion as to the utility of the programme in realising the role and responsibility of the teachers

in higher education.

The resource persons for the programme have been drawn mostly from the faculties of psychology, Education, Economics, English and from other relevant fields. A total of 12 nationally reputed scholars have participated in the programme as external resource persons. Twenty-eight senior professors and well known teachers from the three colleges of the university gave lectures and demonstrations during the four-week programme. Some of the presentations of the senior teachers, who are known as the best teachers on the campus were used as model lessons for the participants. The teaching practice of around ten minutes duration to test the communication ability and the mode of presentation was made compulsory for all the participants. But we could not give sufficient feed-back to each of the participants on their weak points in teaching by way of a general remark due to lack of time and resources. We will be able to do it in the future programme.

We have conducted a small test on the participants as to what type of teaching norms do they prefer. On the basis of the results, the teachers are broadly categorised into structuralists, functionalists, behaviourists and humanists. It is very interesting to note that majority of our junior teachers are functionalists and humanists. We are yet to conduct a post-test on the participants to find out whether there is any positive improvement in the teaching values of the participants after the orientation programme.

The recommendations

The last two days of the programme have been devoted for discussion. The participants were divided into six groups depending upon the proximity of the faculty and a convener was nominated to each group to prepare a report on the issues raised in the discussion. The following suggestions were offered by the participants for an effective implementation of the programme in future.

1. It is found that no single method of teaching is universally accepted not the least, the lecture method. Small group techniques like tutorials, seminars, brain storming can be supplemented to the traditional lecture method.
2. Most of the teachers are of the opinion that the junior teachers do have some initial difficulties in the teaching process and a training programme of the present type is essential.
3. Availability of teaching facilities like the audio visual aids, neat

blackboards and projection facilities, latest books in the respective fields of the subject, stationery and above all a conducive atmosphere with sufficient place to sit and work are considered to be essential for the improvements in the quality of teaching.

4. The senior teachers in the department should act as counsellors of the junior teachers to develop confidence and expertise in the field of their teaching. If a core paper is given to a junior teacher, a senior teacher must also be attached to the junior teacher for guidance.
5. Teaching and research are becoming competitive as research takes a long period of the working day of the teacher, leaving very little time for preparation for the classroom. Therefore, it is suggested that the teachers should not accept serious and long term research projects while they are on teaching assignments. They can be provided with sabbatical leave once in three or five years to work on their respective fields. However, some teachers felt that research in the area of the subject which the teacher teaches and specialises will help him to communicate effectively in the classroom.
6. The single traffic method of presenting information to the students without involving them actively in the learning process should be discouraged and replaced by more creative methods like the small group techniques which involve multitraffic teaching—learning process.
7. In some of the core papers at the P.G. level the topics that were already covered at the undergraduate levels are being repeated. In the case of M.Phil. study the students are required to learn fewer lessons than M.Sc. students (for instance M. Phil. in solid state physics in Andhra University). There is no continuity in the syllabi which the student learnt at the undergraduate level. The standard of some of the topics and their relation to the concerned subject is haphazard. Therefore, the young teacher finds it difficult to teach. This requires a review of the syllabi every year. It is suggested that the requirements of U.P.S.C. examinations can also be taken into consideration in preparing syllabi for the P.G. students.
8. The present examination system does not really test the native abilities and innate qualities of the student. It examines only rote memory of the student and does not relate the

instructional objectives with the test objectives. Short answer, and objective type questions with due weightage to all the units in a subject is preferred to the present easy type examinations. It is also suggested that instead of giving grades to indicate the performance of the student, a pass or fail certificate can be given to reduce tensions of the teachers and students.

9. The working of the present boards of study which prepare and revise syllabi is not satisfactory as they have become routine and ritualistic in their functioning. The boards can be made dynamic by involving the real academicians who are working in respective fields. Junior teachers who are active and interested in the academic work can be made members of sub-committees within the board of each field of specialisation or paper.
10. If a teacher attends training programmes of the present type consecutively for three years, he can be given a test at the end of the programme and a diploma can be awarded as an academic incentive.

Academic Staff Orientation Scheme Some Crucial Issues

K.S. CHALAM

The University Grants Commission (UGC) has now finalised the Academic Staff Orientation Scheme (ASOS) and decided to establish around 50 Academic Staff Colleges in the country for this purpose. The 22nd April, 1987 communication of the UGC indicating the establishment of at least one Academic Staff College in each of the states in the country was received with an aura of mixed reaction from the academic community in the country. The UGC has identified 48 universities in the country as the host universities for the Academic Staff Colleges. In its usual method of functioning, the UGC has entrusted the responsibility of finalising the syllabi, method of operation, appointment of Directors, catchment area etc. to the academic community by organising workshops at six university centres in the country. A total of five workshops have been conducted each at Andhra University, Madras University, Dr. Hari Singh Gour Viswavidyalaya and Punjab University during the month of July 1987. It appears that the Calcutta University did not conduct the workshop out of the six universities identified for this purpose. The draft recommendations of the four workshops conducted in different parts of the country have been finalised at the workshop conducted at Bombay on 14 August 1987. However, the programme of the Academic Staff Orientation appears to have been finally accepted in its concrete form by the UGC, Delhi in the third week of August 1987. Now, the universities which have been identified for the establishment of Academic Staff Colleges

are busy in establishing the colleges and are in the process of procuring personnel for this purpose. Therefore, it is necessary to examine some important issues that are to be clarified beforehand for the effective implementation of this scheme. As a person who has experimented with a variant of the programme for the first time in June-July 1985 with the assistance of the UGC and also as a participant at the two workshops held at Andhra University (as Co-director) and Dr. Hari Singh Gour Vishwavidyalaya, I feel it is necessary to share my ideas with the readers of *University News* for a discussion on the issues.

It is not for the first time that the deficiency in teaching among the university and college teachers has been recognised by a national body like the UGC. In fact the Radhakrishnan Commission had fully recognised this deficiency in 1948-49. The Kothari Commission which came sixteen years later, had devoted a considerable part of their deliberations to this issue in their report. Similar attempts have also been made by expert committees in the developed countries even much earlier than the problem that has been recognised in this part of the world. Lord Robbins, Prof. Hale, Prof. Parry and many others were enquiring into several aspects of teaching and learning in British Universities. Having realised the importance of it, the Unesco has brought out a document on the post-secondary methods of teaching. The UGC has also been experimenting with a number of programmes like COSIP, Faculty Improvement, Refresher Courses, Workshops, etc. for improving the teaching-learning process in the Indian university system. But all these programmes have been organised without any long range objectives and without coordination among them. It is for the first time that a comprehensive programme is conceived in terms of the present Academic Staff Orientation Scheme. Perhaps, the experience gained by the UGC in sponsoring the above programmes might have given fillip for undertaking this programme. Further, the age old objective of preparing students in the art of critical dissent continued to be one of the important objectives of higher education. The explosion in knowledge and greater demands of science, technology and industry and the complexities of society have also widened the scope of higher education, particularly university education, in the country during the second part of the 20th century. These changes in the scope and purpose of the colleges and universities have influenced the teaching profession. New forces have started entering into institutes of higher learning which have also influenced their administration and management. Taking all these signals into

consideration, the UGC (on the basis of NPE, 1986), has started revitalising the system. The starting of Academic Staff Orientation Scheme (ASOS) is considered as one of the important programmes of action of the Government in the direction of change and development in higher education in the country. Under the ASOS, the UGC will support the establishment of Academic Staff Colleges to plan, organise, implement, monitor and evaluate on regular basis academic staff orientation programmes for newly appointed college and university teachers and refresher programmes for serving teachers. Though the guidelines of the UGC are not explicit about the involvement of other functionaries of higher education, the Scheme is broadly drawn for all those who are involved in the system. But, this does not mean that the ASOS is without any inconsistencies. Let us examine the important units of the Scheme and the absence of clarity on certain issues of the whole programme.

Responsibilities of Teachers

With the changes in the objectives of higher education, responsibilities of the functionaries of higher education, particularly the teachers have substantially changed. No more a teacher in a college or university is satisfied with his mere lecturing in the classroom nor the students and society at large are satisfied with lectures alone. The functions of the teaching profession have increased manifold. They include teaching, learning, research, innovation, evaluation and extension work. The manifold activities of the teacher in higher educational institutions particularly at the university stage do not confine the teacher now to his four walls of the classroom. This change in the scope of teachers' activity must be properly resumed and put in proper perspective for the 21st century. The challenges of the academic staff including the administrative staff of the 21st century colleges and universities must be well conceived now to give a broad direction to the whole system. This requires proper orientation of the staff not only in the objectives of higher education but also in the techniques of the profession. The traditional approaches of teaching and administration in the higher educational institutions must necessarily change with the change in the objectives of the system and the profession. Therefore, the teachers in colleges and universities must equip themselves in techniques of teaching, research methodology, upgrade subject matter, develop evaluation skills and administrative capabilities and training in field

work and so on. The administrators should also reorient themselves in the new techniques of management. The Kothari Commisison had pointed out the need for such an orientation about two decades ago. Unfortunately no university in the country seems to have taken the advice seriously. Now the UGC has come out with concrete proposals to implement those recommendations in this particular area of higher education. The result is the organisation of Academic Staff Colleges in 48 universities in the country.

The present problem in the teaching profession is found to be the lack of orientation in any one of the objectives of the profession, mentioned above. Gone are the days when teaching was considered an 'art'. Along with it, the inadequacy of traditional methods of teaching has come out increasingly, though their use is still relevant in certain areas of study. The newly appointed teachers in the colleges and universities are found to be too conscious about the lecture content and inadequacy of their own knowledge. They concentrate not on how to deliver the lecture but only on the content. Sometimes, they lecture far above the comprehension of the students due to over preparation and enthusiasm. Moreover, the new recruit is not equipped adequately with necessary instructional skills that make the classroom teaching effective and interesting to a group of students who are no more homogeneous like those of the yester years. Most of the teachers follow the age old "dull pointless tradition of giving lectures and dictating notes that has passed on from generation to generation". This has to be replaced. Mere lecturing can only develop verbal abilities of students whereas the student is expected to come out of the colleges and universities with a number of abilities and skills to face the real situations in life. Thus the lecture method has to be supported and supplemented by alternate ways of presenting information to the students and involve them in the process of learning. In this context the UNESCO document on "Methods of Teaching in Post-Secondary Education" will be of much help to find alternate methods of teaching rather than replicating the methods that are being imparted in B.Ed. colleges for secondary school teachers. The UGC seems to be clear on this aspect as it has sufficiently cautioned not to "replicate traditional B.Ed. Course" in this programme.

Given the responsibilities, the teachers in the universities and colleges have to identify themselves with the roles of a disseminator of knowledge, creator and inspirer of new ideas. Thus the roles the teacher is expected to play in our colleges and universities now do

not confine him to the classroom lecturing alone. University education involves development of concepts, attitudes and skills. These can be developed only in group and independent study techniques. It is also essential for the teacher to know about his place and role in the emerging Indian society. In addition to these, the teacher is also expected to develop skills of evaluation as it helps the teacher to acquire the necessary information to improve the classroom instruction. Most of the newly appointed teachers and administrators are not aware of the university statutes and the functioning of the various academic bodies and the management of the education system. As such, there is a need to orient the teachers in these matters to realise their role and responsibility in (to) the system.

Unlike the functionaries of the civil administration (or for that matter any administration) the academic administrators like the Head, Principal, Dean and other functionaries of colleges and universities are not provided with any systematic orientation. Every organisation today maintains its own staff college to orient and train their staff. The time has now come to orient our academic administrators in the techniques of management as the volume of work and diversity in its method have changed considerably. Another important functionary in the colleges and universities who is not quite often given any significant place in teaching-learning process is the para-teaching staff member. The para-teaching staff like the Laboratory Assistant, Foreman, etc., in the sciences, engineering and technology faculties are to be trained and equipped now not only in new methods of instruction but also in the content of their own area in view of the growing use of such staff in our academic institutions. The academic staff orientation scheme is silent about this group and many such others.

Target Groups

The Proposed Academic Staff College seems to have taken only one clientele into consideration in devising the programme. But, a serious examination of the objectives for which the college is proposed to be established provides us the idea that it can be extended to a variety of academic functionaries in the colleges and universities. The following chart provides a classification of the target groups who can be brought under the aegis of the Academic Staff College.

The classification of participants who can be oriented in the Academic Staff College (as shown in the chart) indicate the wide scope

and the need for such an orientation. But, the UGC guidelines appear to have not mentioned about the various gradations and categories of the participants of the Academic Staff College. This needs to be considered while offering the content of the programme and its organisation.

Programme Content

The content of the programme of the orientation programme is divided into 4 components. Though some details are provided in the scheme of the UGC it is not very clear as to what are the common components of the programme for the various categories of the participants and what are the specific areas that are to be given a specific categories of participants. It is mentioned in the guidelines that the first two components of the programme contain topics relating to the linkages between society, environment, socio-economic development and education to help the teacher realise the larger context of education and the role of the teacher in our society. Some illustrative topics are also given. But the list seems to have contained only the contemporary problems and issues. No topic is prescribed to understand the global context under which higher education in the country is functioning. It is also essential to understand the experiences of other societies which are pursuing development that is akin to India.

The core component of the programme appears to be provided in component B. The component is devised to impart basic skills to the newly appointed teachers for effective classroom teaching. But, the basic problem in offering this component is the heterogeneous nature of the participants who come from different disciplines, experiences, resource base, dispersed areas and so on. And therefore, each group is to be provided with sufficient orientation in relation to their needs and expectations of their specific situations. No doubt, the topics given in the component 'B' in the guidelines offer a uniform content. But, the diversity and uniqueness in each category of the participants, such as Social Sciences, Physical Sciences, Technology, Engineering etc. courses and the teachers of these courses need to be kept in mind while devising the curriculum for the participants.

It appears that the changing responsibilities of the teachers and academic staff in higher education have not been taken into consideration in devising the content. For instance, a university teacher is expected to conduct research and bring back his results to the

classroom situation and also evaluate his programme. No provision seems to have been made to develop research skills, field work training and other such issues which are more relevant in university education in the 21st century. Further, there is hardly any mention of a topic which is relevant to a particular group of participants such as serving teachers, administrators and para-teaching staff. It is also not mentioned as to how the subject upgradation component can be offered.

The establishment of a link between realities and expectations of ASOS is important in devising programmes for teachers of higher education. The new techniques of teaching and other models of orientation require a situation that is quite different from our realities. Our educational institutions have been built only during the last one hundred years or so on a traditional model. The classrooms, the lecture halls, laboratories, field work trips and all the technology of teaching is based on a given model. If we intend to bring any change in the methods, the curriculum must be revised, first; the classrooms are to be altered and the whole structure needs to be changed to facilitate the new methods to be used in our higher education system. It is necessary to take into consideration the single faculty colleges, colleges in remote areas without any resources and facilities and the peculiarities of the Indian conditions in accepting the new teacher equipped with modern techniques and knowledge. The expected change that is planned through this programme and our capabilities and realities may throw up a number of contradictions that are to be properly studied and resolved. And in this process, an indigenous and relevant content for our situation seems to be more relevant and feasible rather than starting with ambitious programmes. However, this does not restrict us to study the modern methods as an enquiry but should be devised for the Academic Staff College in such a way that it matches our realities.

The topics prescribed for the management and personality development component are not found to be in consonance with the objectives for which this component is offered. The NIEPA model of the programme under this component may not fit into the system as the programmes of NIEPA are basically devised for administrators. Further, a newly appointed teacher does not require the orientation in management because he cannot understand the relevance of it without being exposed to the system. An elementary knowledge about the functioning of the administration, rules and regulations may help him avoid certain initial problems in settling himself firmly in the

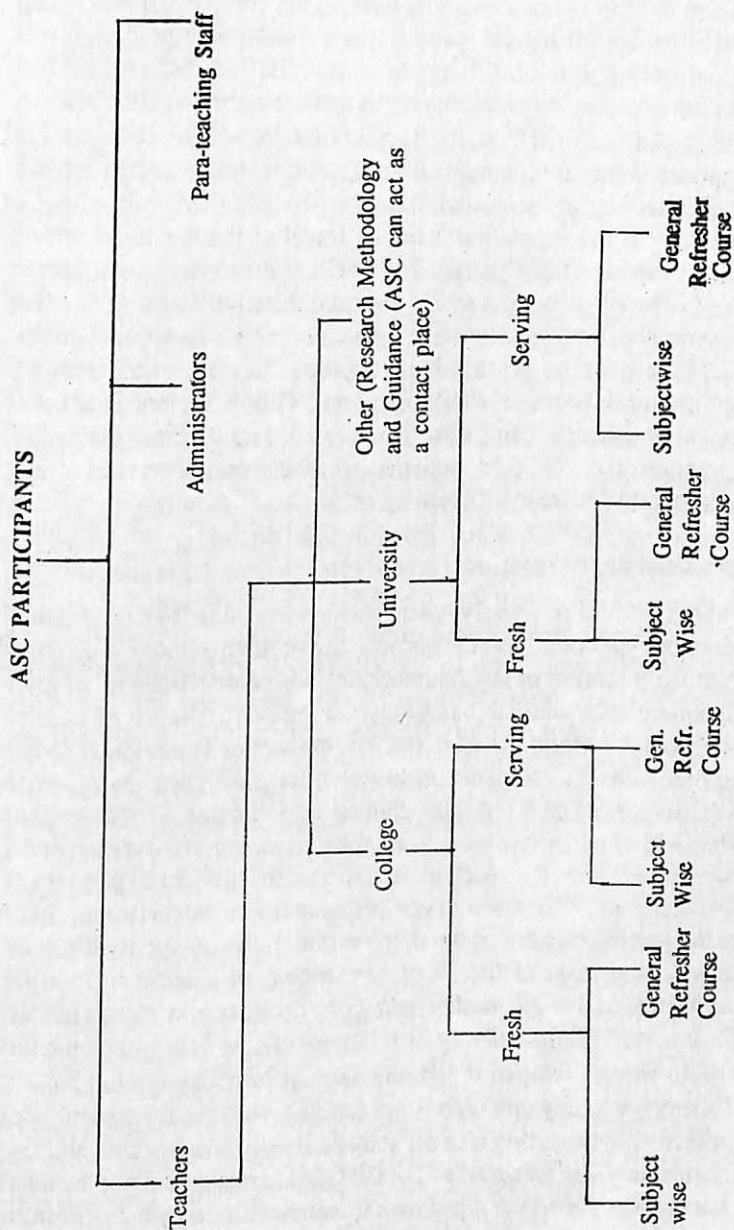
system.

The Academic Staff College is also expected to monitor the professional growth of the teachers, academic staff, etc. However, no concrete proposal is made to monitor their growth and the methods through which it can be done. The western models of evaluation of teachers may not help to bring the desired results due to our socio-cultural situation. New and innovative techniques have to be devised to monitor and evaluate the professional growth of our academic staff in higher educational institutions. The Academic Staff College is provided with another important task through which the confirmation of the teacher is made. It is not clear as to the legal status of such a task being assigned to an academic institution whose legal status is provisional at the moment. The response of the teaching community to this proposed ASOS need to be taken into consideration to ensure their active participation in the programme.

Organisation

Though the document on the orientation programme is very much concerned about the methods through which the classroom teaching is to be made effective, it is not very clear as to how its own programme can be offered. The method of its organisation and delivery need to be devised so as to make the four modules into workable details for practical implementation at the Academic Staff College level. The college has to equip itself with all the required equipment, buildings, resources in the manner in which the trained teacher is expected to take up classes in the colleges and universities. It is not sufficient if the organisational structure is fixed so that everything will go according to it. It must be decided before hand the legal status of this institution and its relations with the university and Government. Because ultimately the Government must take a decision to depute its teachers for training and accept its recommendations for the confirmation of the teachers. It is better to organise one of the colleges in a state as a unit of NIEPA to serve as a feedback agency of higher education in the state if the state has more than one such college or a similar unit within the Academic Staff College can be set up if it is the only college in a state.

It is better to offer the programme in three units, the first two being organised as one unit of four weeks duration. After obtaining the necessary orientation in methods, the newly appointed teachers will



go to their places to work and get themselves acquainted with the situation for some time and come back to the college again to fill up his deficiencies for a week or two. After that he will go back to his place of work and returns to the Academic Staff College for the last spell of orientation in personality development and orientation relating to management of the system. By this time he will be in a position to understand the environment of the institution, his task and his place in the higher education system. It can be offered in two units of equal duration to avoid expenditures on the travel of the deputed teachers to the Academic Staff College. The UGC seems to have accepted the idea of offering it in two spells of equal duration so as to conduct more number of programmes in a year. As per the latest indications, the UGC appears to be in a hurry to start the programme even by reducing the duration of the programme. This is understandable, if it is on an experimental basis. But, as a regular and permanent programme, the ASOS is expected to look into deeper issues and should attempt to resolve them to obtain good results.

Some Unsettled Questions

As the UGC is now very keen in implementing the programme throughout the country at the earliest, the problems noted above may attract the attention of the functionaries who are associated with the programme. The scheme has brought a serious issue for discussion at the workshops conducted in the five universities mentioned above. It appears that the teachers in higher education particularly at the university stage have virtually divided into two camps. The experts in the field of pedagogy wish to establish their control over the entire programme, while the teachers in general, the subject experts doubt the veracity and relevance of the pedagogues in university teaching. The subject experts are of the opinion that in the university teaching, which a large part of the input of teaching in general include the research material of the teacher, pedagogy does not play any significant role. It is said that the theory of relativity can be better explained by Einstein who developed it and any amount of pedagogy imparted to J. Dewey (or to any one who is not familiar with the theory) may not be effective in imparting it to the student, despite his teaching abilities. Unfortunately, the entire ASOS of the UGC is misunderstood by many as the purpose for which it is drawn is overshadowed by the munificent grant that is promised by the UGC in establishing the Academic Staff

Colleges. It is observed that very few academicians in the country have paid attention to the objectives for which the ASOS is made, and some of those who are actively involved in it see a career in the ASOS. This is clearly indicated in some of the proposals submitted to the UGC wherein a parallel university is proposed within a university and in some cases the qualifications for the Director of the Academic Staff College have been proposed in such a way that the person who is entrusted to draw the plan alone will be suited to the post and none else.

However, the ASOS is the most innovative programme that has been put before the academic community of the country to improve standards at various levels of the academic profession. It is not confined to teachers alone. It is a model to capture all functionaries of the system. Yet, the scheme has not taken into consideration the real problems in the portals of higher learning institutions. The dichotomy between the students who are taught in mother tongue and the English medium oriented research programmes, the redundancy of the learning material and the realities of life and developments in the fields of specialisation in higher education, etc. have not been addressed and resolved. In fact, the ASOS should have concentrated more on the socially relevant and productively useful syllabi and curriculum to save the system from redundancy and decay. What is the use of providing all the methods of teaching and subject upgradation in irrelevant material? 'It is like imparting the tropical agriculture to Eskimo-children'.

PERSPECTIVES IN HIGHER EDUCATION

The Problems and Prospects of a Global Perspective in Higher Education: A Third World View

NEMAI SADHAN BOSE

It is risky, if not positively hazardous, to predict the future of higher education by the year 2000. But there should be little difficulty in finding unanimity among the people involved in higher education anywhere in the world that it must at least strive to develop a global perspective. The concept is not new. In India, nearly two hundred years ago the Asiatic Society was founded (1784) in Calcutta by Sir William Jones with the object of investigating "Man and Nature: Whatever is performed by the one or produced by the other" within the geographical limits of Asia.¹ This idea with ancient roots both in the orient and occident had continued to grow. Its geographical limits now encompass the five continents.

Rabindranath Tagore, the great Indian poet and the founder of the Visva Bharati, wrote to L.K. Elmhurst that the most important purpose of education was to know Man. He regretted that there were scientists who thought that they knew "human facts, without taking the trouble to know the man himself". Warning against short-sighted nationalism and stressing the supremacy of Man in the evolution of history, Tagore wrote, "Nations decay and die when they betray their trust but long live Man".² Tagore's experimentation in education resulted in the concept of the religion of humanity. But his own Visva-Bharati's achievements, in concrete terms, have failed far short of the

expectations of its founder. Swami Vivekananda's vision of education as an instrument of man-making, M.K. Gandhi's concept of basic education as a religion of service or Sri Aurobindo's vision of education as a religion of gnostic being,³ have hardly materialised in the field of education either in India or abroad. Yet, the emphasis on Man and the lofty universal aspect of their educational ideas continue to have a strong grip on our minds.

In the Western World also there is a persisting belief among some that higher education is tending to promote greater interrelation, interdependence and cooperation among countries and peoples of the world.⁴ To James Heston of the United Nations University, Japan, "interdependent world" is an increasing reality. He believes that scholars in all fields are becoming more "international minded".⁵ E.O. Reischauer in his *Toward the 21st Century* visualises the world as "rapidly shrinking into a single vast unit", divided into trans-racial and trans-cultural groups.⁶ Opposed to such optimism are views of men like Dragoljub Najman. The latter questions the validity of the concept of growing "interdependence". He argues that interdependence is an *acknowledged* fact in the field of economic development and relationships; a *recognized* need in the field of scientific research; only *an idea* in the field of training highly qualified personnel.⁷ More sceptical, if not cynical, is Stephen R. Graubard, who argues that there does not exist any "international intellectual community", and there is hardly an effort to liberate the academics from their "national and linguistic prisons".⁸ Kenneth Melving ridicules the theory (that higher education will bring international peace and understanding) as "popular fairy tale".⁹ Robin Richardson sees in the use of such words as 'global perspective', 'world community' or 'brotherhood of man', an attempt to bury under a veil of language burning controversies on the values and morals of higher education in the modern world.¹⁰

Admittedly, there is a good deal of truth in the objections raised to the theory that there is a tendency towards a greater dissemination and acceptance of the concept of "interdependence" in the field of higher education. Interdependence has generally been in the field of economics, alliances and agreements that are mostly political or military in nature, and increasing dependence of a larger number of nations on a small number of powerful nations. Reischauer's imagery of the 'Triangular Community' comprising of West Europe, North America, Japan and Australia,¹¹ is a projection of interdependence of this kind. In the coming decades higher education cannot primarily

concern itself with growth of such international interdependence.

Another serious challenge that education in general and higher education in particular has to face with much courage and foresight is the trend to divide the world, in all fields and spheres, into developing Nations and Developed Nations. As Joseph Pittaus of Sophia University, Tokyo, rightly points out, what started as an indication of a nation's economic, technical and industrial growth is now being freely used in a much broader and derogatory sense.¹² The Western nations are generally considered to be 'developed' in the field of education. But the UNESCO's International Bureau of Education's survey of the *Educational Trends in 1970* points out that there is no validity for this arbitrary distinction "for the simple reason that all are, educationally speaking, underdeveloped".¹³ This is very true. Such misconception has been the source of much evil, strengthening as it does the developed nations' sense of superiority, complacency and their inability to understand and appreciate other peoples and culture as which are different, but not necessarily inferior.

A related problem is that of ethnocentrism,¹⁴ i.e. regarding one's own group as the centre of human culture and other groups as inferior. This also breeds and sustains cultural imperialism. A typical example of such 'superiority' complex is Kenneth Melvin's *Education in World Affairs*. An otherwise scholarly book containing interesting ideas, it is written on the presumption that the world is broadly divided into the "backward peoples" of the Third World and the "advanced nations" of the Western World. Melvin argues that the "notion of education as moral virtuosity is most dangerous of all", and he stresses the limitations of the UNESCO-type efforts, and the ineffectiveness of preaching essential human unity and interdependence and the theories of war and peace. He pleads that international education must "address itself to demythologisation". The educationists must, according to Melvin, accept realism in the behaviour, capabilities and civilization on the basis of his classification of the world into two groups of people.¹⁵ The educationists and teachers of today tomorrow cannot overlook or minimise such thesis as Melvin's not only because it encourages and perpetuates racism, ethnocentricity, impedes the slow emergence of a global society and the acceptance of cultural pluralism, but also because it does have many believers. For the promotion of intercultural cooperation and international peace, higher education has to play a crucial role. For this, one of the objects must be to correct some of the directional trends mentioned above. At the same time,

there is an urgent need for reassessment of the purposes and values of higher education. The role of the Universities in teaching an international value consensus has to be acknowledged. But how can these be achieved? One essential requirement will be to take practical, down to the earth attitude and approach. Here the governments, non-governmental institutions and agencies, the media, international academic community and, above all, the teachers have a major part to play. The conflict between liberal education and vocational education has to be resolved. A satisfactory answer is to be found for the student who says, "Sure, I want higher education in preparation for a job. But I want something more than a meal ticket from my higher education". What he demands, besides career-oriented knowledge and training, is human learning that will provide him with answers to problems of poverty, race relations, peace and personal identity.¹⁶

There are no ready and universally acceptable answers to such questions. But certain guidelines do emerge from the trials and errors of the post-Second World War era. The course content and the syllabi of higher education have to eliminate growing ethnocentrism. Cultural pluralism and human diversities have not only to be recognised but appreciated. It is important to acknowledge that there has been the emergence of a sort of world culture that cuts across geographical and linguistic frontiers. For instance, films of Satyajit Ray, or Bergmann, violin of Menuhin, Sitar of Ravisankar, art of Picasso, literature of Shakespeare, Tagore or Hemingway, outstanding achievements in science, medicine, technology or even superlative feats in the field of sports, such as a broad jump of 29 feet or a mile under three and half minutes, are parts of human culture, heritage and progress. These are to be used and highlighted for attitude formation in the educated youth. Another avenue of great potentiality that remains to be more thoroughly explored is a greater and better use of books produced by international organizations such as the UNESCO. Prescribing such books as textbooks for core subjects in schools and colleges is likely to pay rich dividend by facilitating the process of a healthier attitude formation in coming generations.

An alarming and inauspicious sign in the field of higher education in most western countries has been the decline of interest in the non-western world. There are lesser enrolments in such courses every year. Even advance centres with high reputation for intensive area studies of the Afro-Asian World are languishing from lack of funds, poor enrolment and want of patronage. The apparent failure of efforts to

introduce compulsory courses on non-western civilizations in many colleges and universities is a result of this declining interest. The situation poses a major threat to the true spirit of liberal education and the purpose of higher education. Perhaps inevitably, 'explosive specialization' and 'fragmentation of scholarly pursuits'¹⁷ have created and will in the future aggravate the problem. But a sharing of information and a greater effort to integrate the results of such fragmented pursuits in the true spirit of intercultural cooperation will, in the long run, build up a mosaic of knowledge that will be treated as a common heritage of man everywhere in the world.

The world-wide decline of student interest in humanities and social sciences, generally grouped under the rubric 'Arts Subjects', has resulted in frantic efforts to devise new and novel courses, especially in the United States, in order to attract students. The result has been courses on pornography, sex deprivations, violence, and a host of other subjects which are sure to cause an erosion of cultural values and norms of higher education. What is even worse, such courses will accentuate the problem of cultural pollution in the academic enclaves.

'Universalism' or 'global morality' are words that have lost much of their appeal because of indiscriminate use. These have become clichés which none takes seriously. Yet, such ideas have not only to survive but meaningfully infused into the minds of the educated youth. It will be difficult but not impossible and human efforts, since the dawn of history, have constantly been breaking the barriers of impossibility. A healthy change in the social environment has to be brought in. Internationalism and a world-view of human endeavors and activities have also to be made a part of professional education. But this will depend on how we seek to find answers to a few crucial questions: What do we teach? Who teaches it? How will it materially and morally benefit the student? Human motivations are essentially selfish. But there are other interests as well — national and international. They are not always and necessarily mutually opposed or self-contradictory. The content and purpose of higher education should be to drive home this point and effect, as far as practicable, an integration of self-interest, national interest and international interest. A means to achieve it may be the cultivation of one's inherent altruism.

The Williamsburg (Virginia) Conference of October 1967 on 'The World Crisis in Education' was criticized as a demonstration of the incapacity of the academic mind to adopt any "strategy of culture"¹⁸. The Thirty Second Session of the International Conference on

Education convened by the UNESCO at Geneva in July 1970 adopted a report proclaiming that "world peace was indispensable for the development of education". The resolution could also be reframed to stress that education with greater emphasis on the concept of international interdependence and intercultural cooperation is indispensable for peace in the world. The outgoing 20th Century has not, unfortunately, witnessed significant progress in this direction. The coming century, less than two decades ahead, must see a change in the scenario of higher education in the human interest.

NOTES

1. N.S. Bose, *Indian awakening and Bengal* (Third Edition), Calcutta, 1976, pp.28-29.
2. Rabindranath Tagore, *Pioneer in Education* (Essays and Exchanges between Rabindranath Tagore and L.K. Elmherst, Second Edition, London 1961) pp.29,43.
3. William Cener, *The Hindu Personality in Education: Tagore, Gandhi, Aurobindo* (New Delhi, 1976) pp. 199, 200.
4. Joseph Pittau, 'University and Global Perspective' paper presented at the Bellagio Conference on 'The Role of the Universities in Reaching International Value Consensus', (July 1-5, 1980), Rockefeller Foundation, Bellagio, 1982.
5. J.M. Hester, "To Illuminate Tomorrow: Higher Education in an Interdependent World", in S.K. Bailey (ed.), *Higher Education in the World Community*, (Washington, D.C. 1977), p. 2.
6. E.O. Reischauer, *Toward the 21st Century: Education for a Changing World*, (New York, 1973), pp.19,99.
7. Dragoljub Najman, 'Functions for International Organizations in Higher Education', in S.K. Bailey (ed.), op.cit., p.57.
8. S.R. Graubard, *Barriers to Internationalism*, in S.K. Bailey (ed.) op.cit., pp.199-192.
9. Kenneth Melvin, *Education in World Affairs* (Lexington, Mass. 1970) p.xiii.
10. Robin Richardson, 'World Studies', in G. Collier, P. Tomlinson and J. Wilson (ed.) *Values and Moral Development in Higher Education*, (New York 4 Toronto, 1974) p.162.
11. E.O. Reischauer, op.cit., pp. 97-101.
12. Joseph Pittau, op.cit.
13. Educational Trends in 1970: And International Survey prepared by the International Bureau of Education, UNESCO (Paris Geneva, 1970) p. 8.
14. I.J. Quillen, "Cultural Pluralism-Internationalism" in c.o. Asndt and S. Everett (ed.) *Education for a World Society*, (New York, 1951) p 50.
15. Kenneth Melvin, *Education in World Affairs*, (Lexington, Mass. 1970) p. xiii.
16. W.J. Minty and P.O. Synder (ed.) *Value Change and Power conflict in Higher Education*, (Binkley and Coloado, 1969) pp. 10-11.
17. Torsten Husen, *The Community : Its Nature and Responsibilities*, in S.K. Bailei (ed.) op.cit p. 204.
18. K. Melvin op. cit.

6

Family, Class and Education

MAURICE LEVITAS

From Child-study to Family-study

'The Family' has an important place in the sociology of education because the children in the classroom at infant, primary and secondary level obviously come from and are very much attached to families. But it has assumed a much more important place in the sociology of education since genetic endowment lost its place in advanced educational thinking as the major determinant of ability. The expression of this change can be witnessed in the report *Early Leaving* (DES, 1954). 'The figures show clearly ... the extent to which a child's home background influences his performance at school', in the Crowther Report (DES, 1959) which 'showed clearly that among families of manual workers it is still the exception for a child to stay on at school after he is legally free to go', in the Newsom Report (DES, 1963a). 'The results of ... investigations increasingly indicate that the kind of intelligence which is measured by the tests so far applied is largely an acquired characteristic... Particularly significant (among other factors) are the influences of social and physical environment', in the Robbins Report (DES, 1963) and in the Plowden Report (DES, 1966).

It is worthwhile quoting from the Robbins Report (Appendix 1, Section 2) at some length to see how the family was as isolated as a highly significant social factor in the determination of ability.

'Many studies of the distribution of measured ability have brought out the correlation between ability and social class, and

it might be held that superior innate intelligence was the only reason why a greater proportion of middle class children than of manual working class children reach higher education. But this is not the case. For, when grammar school children are grouped according to their measured intelligence at the age of eleven as well as their final educational attainment, one finds that among children of a given intelligence much higher proportion of those from middle class homes reach higher education than those from working class homes'.

There are of course differences between families in every social class, differences which are of immediate significance especially to the practising teacher. These differences turn upon what we have previously remarked, that any observed mode of behaviour is derived from a number of actual behaviours, each one of which is nearer to or further from the modal behaviour. But there is more than one mode for the families of our society and these different modes correspond to and express the different social classes and occupational groupings. What we shall try to show is that they do this in a way more directly linked with class antagonisms than is usually shown.

An enormous contribution has been made by the kind of understanding shown in the literature concerning family circumstances besetting children and the way they perform at school. David Glass, for example, in his introduction to *The Home and the School* (Douglas, 1967) points out that it was clear from an examination of the factors affecting illness (and illness affects educational attainment) that 'differences in the quality of "maternal care" played an important part in the different incidence of lower respiratory infections between social classes'. He immediately goes on however, not to exhort working-class mothers to do better, but to point out that 'it was equally clear that the influence of maternal care was most powerful when housing conditions were good; in poor housing conditions even the most conscientious mothers could do relatively little'. (p.14).

Housing is also taken up as an important physical determinant of educational attainment of working-class children, by Douglas (p.64):

For manual working class children... those whose homes are unsatisfactory (classified by whether or not

they are over-crowded, by whether the survey children share their beds or sleep alone, and by whether there is running hot water and a kitchen and bathroom that is not shared with another

family) make lower scores in the eleven-year tests than in the eight-year tests.

It is not only housing that is regarded as an important part of environment. Other factors, non-physical in character like the level of education of parents, parental attitudes, the degree of privacy that can be engineered even in a crowded home, ability and readiness to discriminate between schools, number of books to be found in the home, stability of the family, size of the family, age placing of children in the family, have all been used in different and in similar combinations to relate family to social class (or rather occupational categories) and the family to school. Thus Douglas suggests that (p.65):

Parents who are unskilled workers, for example, will often be of low educational attainment, the little interest in their children's school work, have large families, live in grossly overcrowded homes lacking amenities (unless they are fortunate enough to have a council house) and may well send their children to primary schools which are ill-equipped, with large classes and less than first-rate teaching.

The great importance of such work is that by it the enormous disadvantage suffered by children of manual working-class families in the competition for generous educational provision is exposed. The benefit to be derived from its being revealed lies in the policies for education that can follow... policies contribution to reduction of the competition.

The Plowden Report on primary school education is possibly the most thorough-going piece of work of this kind. Here the influence of the family as the first source of children's experience is emphasised. Consequent demotion of the importance of prediction as to a child's performance at school comes in the labelling of such prediction as self-fulfilling prophecy wherein advanced and well-controlled children get the most interesting and demanding tasks, claim more time and advance furthest. The basis is thus laid for recommending positive discrimination in the allocation of resources for education in favour of 'education priority areas'.

This recommendation arises from a deepening of the analysis of family influence as the first source of children's experience. Plowden goes beyond a consideration of the family as a unit. It shows how the motivations generated for the child in his family are reinforced

by other families in the neighbourhood and by the primary schools in the neighbourhood.

Table 1
Percentage contribution of parental attitudes, home circumstances and state of schools to variation in educational performance

Between Schools		Infants	Lower Juniors	Top Juniors	All
Based on Average for each school of the variables	1 Parental attitudes	24	20	39	28
	2 Home circumstances	16	25	17	20
	3 State of School	20	22	12	17
	4 Unexplained	40	33	32	35
		100	100	100	100
within Schools		Infants	Lower Juniors	Top Juniors	All
Deviation of each pupil from the school average	1 Parental Attitudes	16	15	29	20
	2 Home circumstances	9	8	7	9
	3 State of school	14	15	22	17
	4 Unexplained	61	61	42	54
		100	100	100	100

The key to this is the outcome of a National survey, 'to relate what we could learn about home and school to the attainment of the children'. And the results of that survey are summarised in Table 1 (paragraph 90 of the Report).

Parental attitudes are taken to sum up the age at which they want children to leave school, type of secondary school preferred, number of visits to school, displaying interest in the child's experience there, time spent with children and help with school work, parents' literacy. Home circumstances are estimated from physical amenities, occupation and income of father, size of family, length of parents' education and qualification. This state of the schools refers to its size, size of classes, organisation, the quality of the staff as judged by the head, the quality

of the teaching as judged by Her Majesty's Inspectors and competent teachers.

The main purpose of comparing the two tables is to arrive at an understanding of the influence of the neighbourhood. If the neighbourhood was not important the tables would be similar. But there is a big difference and difference emphasises the importance of neighbourhood as a factor operating on the variables' influence on learning. The difference exists, as the Report puts it, because (p.34)

Pupils, parents and teachers in the same school and neighbourhood resemble each other more than they resemble pupils, parents and teachers in general, just as apples growing on the same tree resemble each other more than they resemble apples in general. The apples on a tree in a good situation will do better than those on a tree in a poor situation unless the latter receives special attention.

But in the end even in Plowden, it is the family that is centred upon, for example when it deals with parent-teacher co-operation. For the teachers who are concerned to deal with children and their various activities can meet only with particular parents of individual children if they want contact with other primary socialising agents. Here again, just as in Douglas's *The Home and the School*, the social class and occupational group of the father are taken as significant reference points of expectation and attitude on the part of the teacher. But since schools are not in a position to alter immediately social class relationships, Plowden recommends to teachers that should engage actively in changing parental attitudes towards their children's schooling. To government it recommends that special assistance be given to schools in educational priority areas.

The view taken here is that families can only be understood as institutions complementary to the ongoing economic processes and the political and other institutions arising therefrom. The ways in which this complementarity is affected turn upon the ways in which the roles played in families sustain mainly roles played in industry. Michael Anderson in his introduction to *The Sociology of the Family* writes (1971, p.7).

The Family in (Western) Societies is, in sum, a collectivity which makes multiple and pressing demands

on almost every individual, demands which inevitably influence his ability to participate in and meet the role demands of other

collectivities of which he is a member.

It can be agreed that this is so. But which has greater force? Demands from the family on one of its members to accommodate his role at work to that at home or demands in the opposite direction, demands at work for a modification of the role played in the family? The record of history appears to support the view that the latter pressure is the stronger.

Ronald Fletcher (1962) in a review of sociological generalisations on the family and industrialisation describes Le Play's theory of the move from a patriarchal family to an unstable family forced upon it by changing external circumstances' (p.46) and Linton's analysis of the impact of modern industrial society with its demand for a high degree of geographical and occupational mobility and the consequent supplanting of the consanguine type of family by the conjugal type. In both, the functions of the family are listed, and their diminution, as these functions are eroded by industrial society.

Talcott Parsons holds that the type of family which has evolved to meet the requirements of industrial society is despite high divorce rates, a nuclear family of considerable stability. Its characteristics are that it is a residential unit, 'the family Home' being very popular in spite of a high level of geographical and occupational mobility, that it is relatively isolated from other kin as a consequence of the importance of non-kinship units, that the relative economic independence from other kin is made possible by the modern occupational system, that it singles out the husband-father as the primary source of income to become 'the instrumental leader', that the wife-mother's role is predominantly expressive with regard to function. Parson's view is that 'the family has become, on the "macroscopic" levels almost completely functionless' (1956, p.16). Its individual members participate in economic production, in politics, in schools and so on, but 'not in their roles as family members'. The family in modern industrial society has thus arrived at two 'basic and irreducible functions ... first, the primary socialisation of children ... second, the stabilisation of the adult personalities of the population of the society'.

The criticisms made of Parsons, which give rise to a cry from Sussman and Burchinal (Anderson, 1971, p.115); 'Understanding of the family as a functional social system interrelated with other social systems in society is possible only by rejection of the isolated

nuclear family concept', are founded upon researches which show that nuclear families remain linked with families of origin and other kin. Mutual help and support, it is claimed, are derived from each other by members of 'a network... (of) extended family relations.... composed of nuclear units related by blood and affinal ties' (*ibid.*, p.112). The members of the nuclear units in their different roles support each other financially, socially, during crises of various kinds, in job-finding, child minding and setting up home. Against the isolating tendency of geographical mobility there have to be taken into account the facts that the building of houses in rows in industrial towns gave a physical facility to the links between the units of the extended families and that modern transport effectively reduces whatever separation is made necessary by the new locations of work. Willmott and Yong's study, *Family and Kinship in East London* gives support to this point of view.

Nevertheless Parsons's case remains a strong one especially when modern urban families are set against the erstwhile rural family and if we may believe that the latter was not unlike the 'small farm family in rural Ireland' described by Arensberg and Kimball. In that type of family and division of labour and long years of intimate association in the acts and events of common life result in a pattern of total reciprocities between its members (Anderson, 1971, pp. 19-20):

But the point of interest here is that it is the bonds that must be dealt with for understanding... here there is an absolute coincidence of social and economic factors within a single relationship; to separate their social from their economic activities is meaningless. They are one in fact, and, as far as the peasants are concerned they are one in name. Thus any of the words designating status in the relationship, such as father, son, owner, employee, heir etc., might well be used, but in actual practice the first two of them are sufficient to cover all the activities of the relationship.

The non-kinship organisations of modern industrial society make this kind of inclusiveness impossible. The connections between such organisations and families are the men, women and children who belong to both kinds of unit : non-kinship organisation and family. But whereas the purposes at work in any of the former will not change readily to meet the needs of any one family, the ties of the extended family are more easily expendable in face of the demands of the non-kinship organisations.

The dominance over kinship networks in urban society by non-kinship structures is strengthened over time by the family cycle. The stages of the cycle may be defined as (i) home-building, a process begun when the marriage 'contract' is final; (ii) child-rearing, which continues with parents' diminishing involvement and children's diminishing dependence until children assert their autonomy; (iii) dispersal of children by marriage and/or by departure from the parental home; (iv) final stage from completion of the dispersal until the death of the spouses. It is shown by B.N. Adams (Anderson, 1971) that frequency of contact, feelings of affection and sense of obligation are greater towards parents than towards siblings or than towards cousins. The solidarity motivation between siblings' families appears to obtain its force from the obligation commonly felt towards parents. Once that sense of obligation ceases on death of parents, or is superseded by a greater sense of duty towards the newly started nuclear families, ties between siblings are further reduced and weakened. It is during the dispersal stage that non-kinship organisations impress most strongly upon its actors the primacy of its claims. During this time, choice of career, decisions concerning the children's occupational future are of exceptional importance. Increasingly, the changing occupational structure offers a wider variety of options, demands higher levels of education, reduces the importance of assistance from kin and enhances the significance of non-kinship socialising agents (teachers) in their determination of that future.

It is the case too that adequate fulfilment of parental role includes expectations that socialising agencies beyond the family will have a high level of priority in parental attitudes. The reciprocal of teachers' expectations, that in the home favourable facilities will be accorded to education, is a reduction in parents' own roles as possible models for their children emulation. School-given goals compete with home-oriented activities; punctuality, regular attendance at school and homework shoulder out possibilities of share in the home-based division of labour and reduce the scope of parental leadership; children's possible careers are expected to rank high in parents' aspirations for their children; dispersal from the family home, acceptable at a relatively early age on account of work location is expected to be even more acceptable on account of higher educational achievement opportunity; finally intellectual 'distance' between generations, a by-product of more and better education, is expected also to be welcomed by socially adequate parents.

Although social class is generally referred to in the sociology of the family, often it is in order merely to make a contrast between middle-class and working-class 'life-style' in order to prove a point concerning functions of the family in modern society. Fletcher comments in this connection that for Britain at any rate there has been in the past, no such thing as the family (1962, p.37):

it is completely impossible to speak about the family in Britain 'before' or 'after' the industrial revolution in any clear and definite sense;.... in the period preceding the more rapid transformation of Britain to a predominantly industrialized and urbanized community it would have been impossible to specify a 'type' of British family which was uniform.

He goes on to discuss kinship units in Britain's history using social class—not as an incidental feature in their make-up—but as an economic, political and legal entity determining the nature of familial interaction and perspective.

To bring us up to date on modern families Fletcher gives an account of social change without any reference to bitterly contending interest. The long arduous struggle against powerful opposition to create and protect trade unions is summarised by a reference to their 'growing recognition and power'. The sheer physical compulsions imposed by a trebling of England's population in less than a century with its compression into towns, and reforms in education, in working-class political status, in social services and so on all are outcomes of how (*ibid.*, p.117)

Men came increasingly . . . to think it right to take upon themselves, on the basis of knowledge and reason, the responsibility for changing society (including the nature and conditions of the family) in such a way as to achieve a state of affairs morally and materially better than their experience of the past.

The result, it is claimed, is that 'the middle-classes (and therefore the Victorian middle-class family) are now no longer in such a dominant position of expanding wealth and increasing power and social status' (O.124). Convergently, the working-class family experiences greater prosperity, the opening up of opportunities, social security, and develops attitudes towards sex and family limitation largely similar to those of the middle class. 'This leads us to the conclusions that ... now, in contemporary Britain, it is possible to speak of the British

Family as a type of family unit which is fairly uniform throughout society' (p.127).

The objection to Fletcher's view is that he has not carried on into his analysis of modern family relationships his beginnings of an insight into those of earlier times. The reason for this failure is his obvious reluctance to go beyond working conditions that families encounter to those relationships of production engendering the working conditions. Had this been attempted Fletcher would have had to write about capitalism about family relationships in a capitalist class arising from its exploitative functions and about family relationships in a working class arising from its exploitation. Such an approach would also have saved him from the nonsense that the capitalist class no longer exists.

The Family produces Labour Power

The logic of capitalism's organisation of production demands, in Weber's terms, 'the most complete possible separation of the enterprise and its conditions of success or failure, from the household or private budgetary unit and its property interests'. A reflection of this separation is the tendency to study family structures and the work situation as almost mutually exclusive spheres. In Marxist terms, the basic motivation of the industrial capitalist in respect of his employees is the lengthening of that portion of the working day during which is created surplus value: or, conversely, the shortening of the portion of the day taken to create the values equal to the market value(wage) of the labour-power expended by the labourer for the whole working day. The market value of that labour-power, however, is determined in exactly the same way as the value of any other commodity; the measure of labour socially necessary to recreate it.

Now all commodities as commodities are exchange values, which is to say that they are only commodities whilst they are in the process of being bought and sold. In production, that which is to become a commodity is an object undergoing the application of chemical, electronic, mechanical, and/or manual operations and is therefore a something of technical interest. Having been bought, in the possession of its consumer, it is a use-value, i.e. valued for the purpose it serves its owner. In the case of commodities which will be used as consumer goods, therefore, creation occurs, under strict supervision at the place of work; but upon being bought, its transformation into an article of

use is its new owner's own business. Commodities which are to be used as means of production to another, to be consumed themselves in creating consumer goods.

Labour-power, however, begins its history outside the factory or office or other work-place. Its production is a complicated process requiring birth, growth, care and socialisation. Thereafter, other processes of recreation are necessary for its availability as a commodity (abstract labour) available on the market and then as a use-value having specific characteristics (concrete labour) only realisable at the place of work. Whereas labour-power is generated, therefore, away from the work-location, its use goes on, under more or less strict supervision at the work-location.

Rapoport and Rapoport in their study 'Family roles and work roles' remark that (1971, p.289):

during the early marriage phase, family-building tasks must proceed in the context of some effort to establish or maintain an economic base for the family. For a majority, this means the husband's job, though it may also involve the wife. Relatively few couples have no need to work at all.

From the employers' point of view, however, the reverse is the situation: only those who can create and recreate efficiently the labour-power capable of generating a good enough rate of surplus value production, will find a market for their abilities. To mix the Weberian and Marxian orientations: in a capitalist society it is not the job which serves the purpose of building an adequate home, but the home which serves the purpose of providing adequately capable labourers.

Wages, payment for labour-power, have to ensure, as in the price for any other commodity in continuous demand, that its quantity and quality will be insufficient supply. As Marx says in *Capital* (1926 edn. Vol.I pp.190-1)

The owner of labour-power is mortal. If then his appearance in the market is to be continuous... the seller of labour-power must perpetuate himself in the way that every living individual perpetuates himself, by procreation; the labour-power withdrawn from the market by wear and tear and death must be continually replaced... Hence the sum of the means of subsistence received for the production of labour-power must include the means of subsistence received for the production of labour-power must include the means necessary for the labourer's substitutes, i.e. his children, in order that this race of peculiar commodity owners

may perpetuate its appearance in the market.

In order to modify the human organism so that it may acquire skill and handiness in a given branch of industry... a special education or training is requisite and this, on its part costs an equivalent in commodities of greater or less complicated character of the labour-power. The expenses of this education (excessively small labour-power) enter, *pro tanto*, in the total value spent in production.

Given a capitalist system the working-class family is an institution for ensuring to the market a constant supply of labour-power. Besides the direct exploitation in employment of its individual members there takes place indirectly the exploitation of the family as a whole. During the nineteenth century the factory system at first brought the entire family, previously a home-based working unit, through its gates. Marx hoped that from the resultant dissolution of parental authority a new kind of family would arise: 'modern industry, in over-turning the economical foundations on which was based the traditional family, and the family labour corresponding to it had also unloosened all traditional family ties. The rights of children had to be proclaimed'(p.535).The proclamation was made by the children's Employment Commission in 1866 that exploitation of children's labour is (*ibid.*,pp.535-6).

maintained only because parents are able, without check or hindrance to exercise this arbitrary and mischievous power over their young and tender offspring... Parents must not possess the absolute power of making their children mere 'machines to earn so much weekly wage'... The children and young persons, therefore, in all such cases may justifiably claim from the legislature, as a natural right, that an exemption should be secured to them from what destroys, prematurely their physical strength and lowers them in the scale of intellectual and moral beings. Marx comments (p.536)

it was not however the misuse of parental authority that created the capitalist exploitation, whether direct or indirect of children's labour; but... the capitalist mode of exploitation which, by sweeping away the economical basis of parental authority, made its exercise degenerate into a mischievous misuse of power. He goes on to say (*ibid.*)

However terrible and disgusting the dissolution, under the capitalist system, of the old family ties may appear, modern industry, by assigning...an important part in the process of

production, outside the domestic sphere, to women, to young persons, and to children of both sexes, creates a new economical foundation for a higher form of the family and of the relations between the sexes... the fact of the collective group being composed of individuals of both sexes and all ages must necessarily, under suitable conditions become a source of human development; although in its spontaneously developed brutal capitalistic form, where the labourer exists for the process of production, and not the process of production for the labourer, that fact is a pestiferous source of corruption and slavery.

To proceed further some elucidation is required of the phrase, in the quotation from Robert and Rhona Rapoport 'need to work'. The sense in which this phrase is used is unambiguous: that social arrangement whereby provisions, shelter, clothing, a modicum of luxury, recreational facilities become available to an employee in return for a readiness to obey his employer for a stipulated number of hours per day. Another way in which 'the need to work' may be felt is as that combination of drives, impulses and instincts, inherently human, to make things, contrive devices, solve problems, attain goals. The two needs can be complementary because artifacts to be made, problems to be solved, goals to be attained are all socially generated. In capitalist society however, the areas of greatest working endeavour are chosen and defined by capitalists and 'Employment' therefore—the contract between capitalist and proletarian—is a process whereby the time of many men is bought to serve purposes determined upon by the owners of the means of production.

This time that is bought is the crux of the relationship between the working-class family and the relations of production in a capitalist society. Change in the working-class family has been in accordance with struggle between the two major social classes of capitalism over the question of working time. The length of the working day, the duration of a working life, the number of hours available from the entire family to a capitalist's purposes, have been decisive in structuring the family, its internal division of labour and the consequent family role patterns.

The division of a labourer's time is into three: (a) working for his employer; (b) renewing his ability to do so; (c) enjoying himself. Marx writes (1926 edn., Vol.I, pp.257-8):

The working day has a maximum limit...conditioned by two things. First, by the physical bounds of labour-power, within the

24 hours of a natural day a man can expend only a definite quantity of his vital force... during part of the day this force must rest, sleep; during another part the man has to satisfy other physical needs, to feed, wash and clothe himself. Besides these purely physical limitations the extension of the working day encounters moral ones, The labourer needs time for satisfying his intellectual and social wants, the extent and number of which are conditioned by the general state of social advancement. The working day fluctuates therefore within physical and social bounds. But both these limiting conditions are of a very elastic nature... so we find working days of 8, 10, 12, 14, 16, 18 hours i.e. of the most different lengths.

The duration of working day at any given time and place is determined by the struggle between the interested classes. 'What is a working day? What is the length of time during which capital may consume the labour-power whose daily value it buys?' asks Marx (*ibid.*, p.290). 'It has been seen that to these questions capital replies: the working day contains the full 24 hours with deductions of the few hours of repose without which labour-power absolutely refuses its services again'.

There stems from the inseparability of the commodity labour-power from the labourer, from its generation and regeneration at home and its consumption at work, from the elasticity of the working day a unique characteristic (*ibid.*, p.259;

the capitalist maintains his right as a purchaser when he tries to make the working day as long as possible... On the other hand... the labourer maintains his right as a seller when he wishes to reduce the working day to one of definite normal duration. There is, therefore, an antimony, right against right, both equally bearing the seal of the law of exchanges. Between equal rights force decides. Hence it is that in the history of capitalist production, the determination of what is a working day, presents itself as the result of a struggle, a struggle between collective capital, i.e., the class of capitalists and collective labour, i.e. the working class.

The struggle over the working day has not been a matter simply of standardising what hours per day were to be expected from an individual labourer. An important part of that struggle was the identification of members of the working-class family whose subjection to direct exploitation should be delayed or limited. Hence the long

and continuing battle for legislation to take children out of the factories and for a progressive rise in the age of prohibition of employment. The same engagement is carried forward in a new way when the demand is made to raise the school-leaving age. Taking the view, therefore, that the family undercapitalism is a unit for generating labour-power for sale upon the market, the length of the working day is the number of hours obtained by the capitalist from all the members of the family. The elimination of children from the directly exploitative situation is, therefore, a curtailment of time available to the capitalist.

Hence too, the sanction for married women to stay at home stems in large part from the convenience seen to inhere in a division of labour corresponding to modern industrial productive relations. This is clearly brought out in Ducpetiaux's calculation, cited by Marx, that an entire working-class family earns less than the cost of feeding one prisoner (*ibid.*, p.739).

In the family taken as typical we have calculated all possible resources. But in ascribing wages to the mother of the family we raise the question of the direction of the household. How will its internal economy be cared for? Who will look after the children? Who will get the meals? Do the washing and mending? This is the dilemma incessantly presented to the labourers.

The Factory Produces household roles

Here is defined the so-called expressive role of the wife-mother arising as one element in the division of labour between husband and wife. Husband in the factory or pit: wife in the home. It is a mistake to see this division of labour as home based. It is factory based unless the economy is directed to satisfy social needs. The wife-mother expressive role must (i) ensure the proper fulfilment of her husband's instrumental role in his performance as a labourer, and, (ii) ensure their children's proper availability for similar roles. The husband for his part demands that his wife fulfills efficiently this function and in so doing defines, at home, his identity as a labourer in the factory. The conditions exist, therefore, for a transference to the labourer's home of personal-functional relationships echoing the capitalist-labourer relationship: the wife becomes the labourer's labourer.

Engels saw this division of labour, as it is derived from productive relations, to be the last major barrier to the rule of sex love in proletarian marriages. When he explored the ways in which relations of production manifested themselves in family structure, he concerned

himself largely with the conditions generating sex war in the bourgeois family: 'monogamous marriage comes on the scene as the subjugation of one sex by another; it announces a struggle between the sexes unknown throughout the whole previous pre-historic period' (1972 edn.p.128). Its original intention was 'to make the man supreme in the family and to propagate, as the future heirs to his wealth, children indisputably his own' (ibid). The subjection of women was generalised in society by monogamy's first contradiction, ... hetaerism (concubinage and prostitution) but also by its second contradiction, adultery, women obtained their revenge. The bourgeois marriage was always subject, in one degree or another, to control by the property relations of its members. Hence the tendency for monogamy, with its contradictions, to persist in bourgeois marriages.

Because of the absence of property and inheritance, the domination of the proletarian husband over his wife and over his children ceased to be in force. 'Sex love in the relationship with a woman becomes and can only become the real rule among the oppressed classes, which means today among the proletariat—whether this relation is sanctioned or not' (p.135). And he saw the possibility of economic independence of the proletarian wife as the guarantee that sex love would be the strongest marriage bond (*ibid.*):

And now that large scale industry has taken the wife out of the home into the labour market and into the factory, and made her often breadwinner of the family, no basis of any kind of male supremacy is left in the proletarian household, except, perhaps for something of the brutality toward women that has spread since the introduction of monogamy...if two people cannot get on they prefer to separate. In short, proletarian marriage is monogamous in the etymological sense of the word, but not at all in its historical sense.

Capitalism imposes a barrier to the full realisation of these possibilities for the proletarian wife. And it does so precisely because it insists upon the function of the working-class family as a supplier of labour-power both immediately and prospectively. That is to say, it insists upon retaining the working-class family as an economic productive unit, a unit for the production of labour power. The road to social production was opened by (p.137)...

large-scale industry... only to the proletarian wife. But it was opened in such a manner that, if she carries out her duties in the private service of her family, she remains excluded from

public production and unable to earn; and if she wants to take her part in public production and earn independently, she cannot carry out family duties.

When women are in employment an associated barrier to equal status with men is encountered in unequal rates of pay. This in itself is a force in the direction of making working-class families function in accordance with capitalist purpose. But in general, when wives are at work, the likelihood that instrumental roles become common to the spouses is undoubtedly greater. Similarly the problems of coping with expressive roles are open to solutions on a basis of equity.

The foregoing discussion emphasises the dominating compulsion of work roles in determining relationships in the home. In this way too, the home's part in renewing a worker's ability to produce is also stressed. What is not indicated is the influence of time used, in family life, by its members, for emotional, intellectual, social and aesthetic fulfilment. The 'working day' with its echoes at home crowds out the 'living day'. But the emphasis is correct. There are the facts that 'the job', in varying degrees, itself yields these satisfactions and frustrations, and that it furnishes the wage determining life-style.

This force is at work in the socialisation of children. Attitudes to education and to school work apart, the realities of the social relations governing availability of shelter, of clothing and sustenance matter far more than their material quality. This greater importance inheres in the children's having to learn precisely these meanings and in the fact that these relationships condition the conditions of their lives. The precedence of the husband-father's external role as a workman makes itself felt in the allocation of time available to his internal role-set as a father and as a husband. The primacy of his role as an earner, whereby the connection between home and work is established by the responses from the wife-mother to this role. Not least, the immense power of 'the job'—governing style of life, associations, morale—over the pair who, to their children, are powerful persons, gives it god-like proportions and qualities.

Not only from inter-adult behaviours does a child draw his awareness of the supreme power of employment. The worries and hopes of parents turn ever and again from problems of physical, mental and social growth of their children to the ultimate marketability of their labour-power. Possible occupations are understood, in accordance with parental suggestion, to be more or less realistic. The life experience of parents, their knowledge of what counts in the future chances of

bread-winning comes into play at an early age in making sure that their children will have a good start in the educational competition for selection. Their purpose is to help their children win a good bargaining position in the competitive labour market.

It has been indicated that if the emphasis on the proletarian family as a unit in society for producing labour power as a commodity is justified, it is certainly not the whole story. For one thing, as Marx pointed out, labour has two characteristics, it is, under capitalism, a commodity for sale upon the market with an exchange-value, but is also a use-value. That is, it has a concrete aspect labour makes the labourer—not a mere 'seller of labour-power' on the labour market, not a mere 'embodiment of labour-power' in the productive process—but a socially active worker achieving in co-operation with others, personal fulfilment. Work in this sense is creative of human welfare and affords satisfaction not otherwise obtainable.

Again, a definition of the working-class family as being only a unit for producing labour-power as a commodity would render the struggle for a shorter working day meaningless. It is demanded that part of the day which is not expenditure or recreation of labour-power should be extended at the expense of the former. The shorter the working day and working week, the longer annual and seasonal holidays, the more there is time for emotional, physical, intellectual, social and aesthetic fulfilment. The struggle of the working class thus joins a demand for time in which to live, to one in which the sources of a fuller life—in all its aspects—are made available to its members. Here is the basic motivation that brought the labour movement consistently to pursue the objective of secondary education for all children rather than the competitive philosophy enshrined in the slogan of 'equality of opportunity' in education.

Characteristics of the modern working-class family seem to include therefore:

(1) current and prospective exploitation by capitalism of the family as a unit and of its individual members by (a) a division of labour in the home which facilitates direct exploitation of the male spouse and through him of his wife, (b) direct exploitation of the wife too during certain phases of the family cycle, (c) socialisation of the children—including education—in the direction of anticipated exploitation;

(2) struggle as a family and through non-kinship organisation, to reduce the scope and intensity of exploitation by (a) readiness to engage

in work as one mode of social life, (b) readiness to effect a home-based division of labour in accordance with different phases of the family cycle to effect this and other kinds of personal development of its members, (c) socialisation of children—including education—in the direction of becoming mature, independent, cultured persons;

(3) struggle to insulate the family and its members from the harsher effects of market conditions upon price and conditions of sale labour-power by demands for a variety of social services;

(4) dependence for maintenance of home and life upon earnings from sale of labour-power (or upon social security benefits) and absence of private property on a scale sufficient to reduce this dependence materially;

(5) consequent appearance of hardship during the second, child-rearing phase of the family cycle and during the fourth phase when reduced earnings occur;

(6) dependence for educational facilities upon arrangements made by state institutions and therefore subject to considerable influence from the capitalist class.

The bourgeois family

A little had already been said about the bourgeois family that is, families of members of the capitalist class. A most important characteristic of a family in this social class is that it is linked to the economy, not by the application of labour to the productive process but by its influence over the nature and distribution of the product. In this connection, Marx (1926 edn. Vol.II, Chapter XX), in his analysis of simple reproduction with its Division I where means of production are produced and Division II where articles of consumption are produced, directs attention to the further bifurcation of Division II into (a) production of necessities of life and (b) production of luxuries. In that statement we are shown a demand for products which will enter into the consumption only of capitalists, but which must be a part of the totality of goods created by labour, Marx indicates here that certain labourers are themselves luxuries.

Earlier, in *Capital* (1926 edn. Vol.I. p.488) Marx noted that 'the extraordinary productiveness of modern industry... allows of the unproductive employment of a larger and larger part of the working class'. He estimated that of 'eight millions of the two sexes of every age... in any way engaged in industry, commerce and finance' in 1861,

1,208,648 persons worked as domestic servants.

The contemporary scene has unfolded against a background of family nucleation, technological development, changing types of employment and a vast output of new products. The results are manifest in an enormous growth in the number of households accompanying their reduction in size. 'Separate occupiers rose from just over 5 million in 1871 to just over million in 1901.. By 1921 the number of private families had grown to 8 3/4 million and in 1931 there were just over 10 million. In 1951 there were just over 13 million private householders' (Marsh, 1968, pp.48-52). The figure given for 1961 is 14.6 million. Moreover, in these households a revolution in housekeeping technology has been effected.

Thus the lesser bourgeoisie find it possible to manage with reduced attention from servants. And in any case enterprise has been able to use productivity to transform the 'servant class' into a 'service industry' including a proliferation of luxury flats, hotels, clubs and other commercialised forms of personal service. The outcome has been a sharp decline in the number of domestic servants, which stood at 103,000 in 1961.

Nevertheless, as an occupational group they are still to be found though the full time resident seems to be giving way to the full time non-resident servant. A random look at *The Times* domestic vacancy column for 29 September 1971 showed that there were required: 6 married couples to perform a range of female duties including cook, housekeeper, and cook's help, and of male duties including those of chauffeur, houseman, handyman, gardener; 15 single females to perform nanny or nanny's help duties 11 single females to act as housekeeper/cooks; and 5 single males to act as houseman, butler or chauffeur. Table 2 brings together the information available from the vacancy column.

The intention here is not to analyse the terms of domestic service but to show that the division of labour in the capitalist household involves the use of persons not in the family in ways that imply inferior status. The female spouse of such a family carries out her expressive tasks by arranging for other persons to do the work associated with them. This ensures for the wife-mother a commanding role, in miniature not unlike her husband's in the sphere of production. For satisfaction in socially useful work the bourgeois substitutes a drive to accumulate wealth, elevating this to a criterion of worth. The bourgeois wife is made dependent by marriage but she finds

compensation in managing rather than performing the household chores. The promotion of both forms of work-evasion to a high place in the order of values is registered in the low currency attached to work performance. The daughters of the bourgeoisie become acutely aware that any future status will be determined by a future husband's economic success. Dissatisfied with the uncertainty of power whilst they are spinsters, and with its pale reflection if they become wives, they seek entry into the world of work. But it is not work in the factory or the office that they want. Some find direct entry into the business world, but certain professional employment might also do. The sons of capitalists are disposed by self-interest as well as by the terms of their socialisation experience to perpetuate the roles of their fathers.

Table 2
Domestic Vacancies

Number of Personnel required posts		Accommodation prospect associated with position		
		Live in	Live out	Self-contained rent-free flat or house
6	Couples	2	—	4
15	Nannies, etc.	7	4	4
11	Housekeeper/Cook	5	3	3
5	Single males	1	3	1
37		15	10	12

The socialisation of children of the capitalist family proceeds, therefore, in a web of interactions and meanings which induce in them expectations consonant with an active role in exploitation. Their direct identity forming experience includes habituation to master-servant relationships, to a style of living based on great economic advantage, and to echoes of father's capitalist role in industry and commerce.

The bourgeois family complements proletarian families first of all at the point of production—in the factory. Lane and Roberts in *Strike at Pilkington's* (1971) show, concretely, how a capitalist extracts with working-class families.

From what they report it appears that the firm's existence has given a Pilkington's a high degree of integration and of continuity of common purpose as a family (p.36):

Of the two original Pilkington glassmen, William, with his wife's assistance, produced six sons and six daughters while Richard managed four sons. Of these, two sons of each took an active part in the business: these sons produced nine sons and fourteen daughters. From this third generation the firm captured eight of the sons, and three of the daughters made sufficiently good marriages to provide three sons suitable for fourth generation directorships. The four other fourth-generation family directors are descended through the male line. The fourth generation who were board members in 1959 had produced seven sons and thirteen daughters: insufficient sons, when drop-outs are accounted for, to ensure a family majority on the board in the fifth generation.

Thus it is that family places are now augmented by six who have been promoted from managerial positions.

Market manipulation even for the sale of glass requires a sense of vocation: 'There has obviously been a rare degree of dedication of purpose, for the firm could not otherwise have grown to its present size and remained under family control' (p.37). A religious dimension has been given to this economic purpose by the family's strong connections with the church. In all probability this helps considerably in bringing others to share their sense and direction of moral duty. But conviction alone is not relied upon (p.38).

Coupled with this moral dedication to the firm has been a severly paternal attitude towards employees. ... Pilkingtons have attempted to extract from their employees the same devotion to duty that they have set for themselves. Those who have been faithfull have been rewarded—those who have been naughty have been smacked.

If, in spite of exhortation from the pulpit and threat of economic penalties, private property nevertheless suffers offence, there are other control agencies participated in by the Pilkington family. 'Successive generations of Pilkingtons have been JPs on the St. Helens bench, local councillors and aldermen (as well as) commanding officers of the local Territorial Army Unit' (ibid).

It has been noted that if the Pilkingtons 'have lived comfortably, they have not lived flamboyantly' (p.37). Their thrift has been displayed also in their wages policies and in welfare arrangements whose motivation was avowedly that of a work efficiency. As Lane and Roberts note, this latter meant that 'workers are as a matter of

fact units of manpower but they must not be treated as if they are' (p.44). To study the activities of this capitalist extended family and how the various roles of its members link together is to be impressed by its similarity—in miniature—to the larger capitalism's economic and power structure within which it operates.

Proletarian families are attacked by a similar kind of complementarity at their homes. Mortgage interest is one other way of appropriating for capitalist families a portion of the labourer's product. And so is rent—not to mention land-value payments included in the price of a house. An indirect but efficient way of achieving a similar result in the use of local government as agencies for the collection and payment of interest on capital borrowed 'to finance' the building of working-class homes.

It would not be true to claim that every capitalist family functions as directly as Pilkington's in its control over working-class families. But it is certain that directly or indirectly every capitalist family engages in the perpetuation of its economic and social privileges. Its members assume, in the appropriate institutions, financial, industrial, political, legal, military, ideological and religious roles in order to do this. Socialisation at home and at school of the children of such families, therefore, proceeds accordingly.

Characteristics of the modern capitalist family seem to include therefore:

- (1) possession of wealth enough to form a basis for such continuous exploitation of labour-power as will yield sufficient surplus-value to live on;

- (2) current and prospective exploitation, of wage and salary earners in productive employment, by the family as a unit and by its individual members;

- (3) a division of labour in the household which secures service from persons not related to the family, this service being a mode of surplus-value expenditure;

- (4) the assignment thereby of secondary exploitative roles to house-wives and to the children of the family;

- (5) socialisation of the children—including the education—in the direction of anticipated exploiting roles;

- (6) effort as a family, and through non-kinship organisations to maintain and extend economic power, by recruitment of offspring and of other kin to direct the protection and legitimation of that power;

- (7) freedom from uncertainties of an economic kind during all phases

of the family cycle;

(8) maintenance of family solidarity and loyalty by economic ties and by inheritance;

(9) access to special educational provision for children;

(10) influence by means of membership of non-kinship organisations, over state educational provision for children of the working class.

Relationship Between Education and Development

THE WORLD BANK

Education has long been recognized as a central element in development. When the developing countries began their drive for social and economic development nearly three decades ago, education was perceived as a means not only of raising political and social consciousness, but also of increasing the number of skilled workers and raising the level of trained manpower. These benefits, together with the visible gains for individuals from education, stimulated an unprecedented growth of enrollment in primary schools and of substantial investments in education at the secondary and university levels. Although substantial progress was made during the 1950s, educational growth failed to achieve (1) a more equitable distribution of income and social services, and (2) an equilibrium between the productive capacity of the education system and the absorptive capacity of the labour market.

The 1960s witnessed profound changes in the perception of the development proceeds. As the developing countries began to focus on extending the "modern sector" throughout their economies by incorporating twentieth century industrial processes, it became clear that the modern sector was absorbing a disproportionate share of scarce capital, while the potential of smaller, traditional enterprises was being unduly neglected or sometimes indirectly penalized. Because modern investments tended to accumulate in urban areas, they contributed to migration of people from rural to urban areas and, in some instances, exacerbated urban unemployment. The modern sector failed to absorb

the migrants at a pace proportionate to migration. It soon became clear that "national economic growth", by itself, was insufficient to improve the welfare of the poor, rapidly and effectively.

By the late 1960s, the need to widen definition of "development" beyond a narrow focus on economic production was apparent. In 1970, the General Assembly of the United Nations resolved that "as the ultimate purpose of development is to provide increasing opportunities to all people for a better life, it is essential to expand and improve facilities for education, health, nutrition, housing, and social welfare, and to safeguard the environment."¹ This approach to development is aimed at improving the welfare of human beings, primarily in terms of providing goods and services needed to eliminate manifestations of poverty, such as malnutrition, disease, illiteracy, and squalor. These efforts are not, however, intended as a social service to marginal populations, but rather, they are the nucleus of an overall national development effort. The development of human resources not only helps alleviate poverty, but also contributes significantly to growth in national productivity and income.

This concern was highlighted by Robert S. McNamara in his presidential address in 1973 in Nairobi.² "The (economic) growth is not equitably reaching the poor. And the poor are not significantly contributing to growth", Mr. McNamara said, and added, that it was not wise to concentrate on the modern sector in the hope that its high rate of growth would filter down to the rural poor. Measures would have to be taken that would more directly benefit the poor, especially those in the rural areas. The concern for growth was, therefore, expanded to include the goals of income distribution and of satisfying the basic needs of all members of society. At the 1977 Annual Meetings of the Bank and the International Monetary Fund, held in Washington, Mr. McNamara outlined the components of the basic needs that must be met if poverty is to be overcome—specifically, food with sufficient nutritional value, shelter and clothing, education, clean water, and health care.

This comprehensive approach to development underlines the significance of education in three interrelated ways.

AS A BASIC HUMAN NEED—People need education to acquire a broad base of knowledge, attitudes, values, and skills on which they can build in later life, even if they do not receive further formal instruction. Such education provides people with the potential to learn,

to respond to new opportunities, to adjust to social and cultural changes, and to participate in the political cultural, and social activities. As societies develop, education becomes a necessary condition for the ability of the individual to identify with the prevailing culture.

AS A MEANS OF MEETING OTHER BASIC NEEDS—Education influences and is in turn influenced by access to other basic needs—adequate nutrition, safe drinking water, health services, and shelter. Reduction of gastrointestinal diseases and of parasites, for example, which can be achieved through education, clean water, and health programmes, considerably increases the nutrition to be gained from a given quantity of food. Conversely, improvements in nutrition, particularly in infants and young children, greatly improve their learning capacity, their overall benefits from education, and ultimately their productivity and income. So, while clean water can make an important contribution to better health, whether it will do so depends on the education and understanding of its users.

AS AN ACTIVITY THAT SUSTAINS AND ACCELERATES OVERALL DEVELOPMENT, EDUCATION PLAYS SEVERAL ROLES—First, it prepares and trains skilled workers at all levels to manage capital, technology, services, and administration in every sector of the economy. Experience has repeatedly shown that development projects are not well implemented unless investment of capital and transfer of technology are accompanied by adequate human knowledge and skills. Studies have also shown that economic returns on investment in education seem, in most instances, to exceed returns on alternative kinds of investment, and that developing countries obtain higher returns than the developed ones. Second, through trained personnel, developed methodologies, and institutional settings, education facilitates the advancement of knowledge in pure and applied fields. Third, as concern for the management of the environment, for conservation, for the use of energy, and for achieving a balance between human population and natural resources mounts, education will be expected to raise the consciousness of people and to provide knowledge, skills, and trained manpower to deal with environmental issues. Fourth, rapid economic growth, technological advancement, and social change transform the relationship between the individual and may tear down the traditional supports that have provided the social framework for the individual. The ability of individuals to identify with their changing culture and find constructive roles in society depends, to large extent, on what education can provide by way of

self-understanding, better knowledge of the choices available to society, and critical view of the culture.

What education can do, however, is constrained by, among other things, the prevailing economic order, political power, and social structure. Education is certainly most effective in settings in which several interrelated policies and programmes fostering social and economic improvement are simultaneously at work. But the experience in developing countries during the past three decades suggests that in the absence of politically planned social change, education does not necessarily act as an agent for maintaining or reinforcing the status quo. On the contrary, widely diffused educational activities provoke and facilitate change in prevailing sociopolitical conditions by providing the otherwise disadvantaged persons with a degree of social and economic mobility to break through traditional barriers. With an understanding of political rights and actions, these persons can be active in organizing forces for change in the community and the nation.

One must think of education, therefore, not only as a "sector" of development—parallel, for example, to agriculture or industry—but as a pervasive element that must be integrated—horizontally and vertically—into all development efforts. In its 1978 meeting, the General Conference of UNESCO affirmed that "by the very complexity of the problems which it must help to solve, education must be conceived in an interdisciplinary context as a factor of multidimensional development of which man is both the end and the instrument."³ The concept of education as a pervasive element has several implications. First, education must cover a wide spectrum both in content and in form. The content can range from basic knowledge to advanced research, and from training in living skills to highly sophisticated production skills. The form of education can vary from the most general types of formal schooling to the most specific kinds of non-formal teaching and from the simplest levels of education in literacy and numeracy to the most advanced postgraduate specialities.

Second, general education is as essential for attaining development objectives as training in specific skills. Recent studies have shown a positive three-way relationship among primary education, agricultural extension, and productivity on the farm, and an inverse relationship between the size of family and the level of education of both parents, or of the mother. This relationship, however, was not evident in countries with the lowest level of female literacy. More broadly, the complementarity of general education and training in skills is

essentially related to the rapid changes that are taking place in developing countries. In such a world, a combination of general educational and specific skills is necessary if people are to be able to adapt to change and to take a constructive part in it.

Third, investments in education and training should be balanced with investments in other fields so that learners can become involved in productive tasks in a growing economy.

Fourth, equity in education and national economic development are mutually consistent. More education opportunities in rural areas, for instance, would promote equity, while contributing to a more rapid adoption of improved agricultural methods, the development of industries, and to higher incomes in rural areas. Similarly, increasing education opportunities for women boosts equity and fosters national development. The potential contribution of educated and trained women to the labour force and the importance of their education in the improvement of family welfare and planning are factors still underestimated in national development.

NOTES

1. See United Nations, *Resolutions Adopted by the General Assembly during its Twenty-fifth Session*, 15 September - 17 December, 1970. Supplement No.28 (A/8028). (New York : United Nations, 1971), p.41.
2. Rober S. McNamara, *Address to the Board of Governors*, Nairobi, 1973. (Washington: World Bank, 1973), pp.10 and 13.
3. UNESCO, *Records of the General Conference, Twentieth Session*, Paris, 1978, Volume 1, Resolutions. (Paris: UNESCO, 1978). p.23.

Education, Society and Development

GOVERNMENT OF INDIA

1.1 When the National Education Policy was formulated in 1968, it was envisaged that it would be followed by a "five yearly review of progress and working out of new policies and programmes". In pursuance of this, at the time of formulation of every new five year plan, a review has been undertaken to assess the shortcomings and achievements of education and decide upon the programmes for the coming five years. While these reviews have served a useful purpose, it is now felt that a mere review and minor modifications of the present framework will not be enough. The country now stands on the threshold of the twenty-first century. Those who are being born now will finish their elementary schooling at the turn of the century and enter into a world which will, it is already clear, offer opportunities unprecedented in the history of mankind to those who are equipped to cope with the future challenges and the accelerating pace of change.

1.2 Apart from the imperatives arising out of a continuing revolution in the world of technology, India is faced with challenges at home whose urgency cannot be denied. Whether the country can face these internal as well as external challenges successfully will decide the quality of life of the citizens of tomorrow. Education is the most effective instrument to meet these challenges. Only education can imbue people with the knowledge, the sense of purpose and the confidence essential for building a dynamic, vibrant and cohesive national capable of providing its people with the wherewithal for creating better, fuller and more purposeful life.

1.3 Before any specific tasks are assigned to education, it is necessary to look carefully at the nature and concerns of education and the role various sectors within it can play for the development of individual and society. Once such an overview has been presented, it would be easier to determine the manner in which various tasks should be performed through the formulation of appropriate policies and strategies for educational restructuring.

1.4 In the history of mankind, education has formed a continuum and a basis for the development of human society. Through development of attitudes, values, capabilities both of knowledge and skills, education provides strength and resilience to people to respond to changing situations and enables them to cause and contribute to societal development. History has established beyond doubt the crucial role played by human resources in the development of nations. And the development of human resources is the main function of education.

Social Development

1.5 The concept of societal development includes economic development for furthering the material well-being of people; social and political development for living harmoniously and promoting a democratic and just society; and intellectual, cultural and aesthetic development for enrichment of the quality of life.

1.6 Change, rather than status quo, has become the watchword for successful living and education has been recognised as the tool for ushering in changes in an orderly manner. While education continues to be concerned essentially with individual development, its approach to this fundamental task is now conditioned by social concerns which have acquired a new significance with a view to reducing conflict and violence. Great wealth of experience has been accumulated about the modalities by which education can play the roles assigned to it. In this process, the concept of education itself has changed. It is not more confined to formal structures and institutions. The dynamics of the expansion of knowledge has led to the concept of life-long learning for the individual and the evolution of institutions of continuing education. A great deal has been discovered about the process of learning itself and its highly personalised character. The boundaries of the well established disciplines of the past have given way to interdisciplinary teaching and research. New technologies have begun to be used widely both to enrich the quality and enhance the reach of

education.

1.7 In any country, the goals of societal development reflect the aspirations of its people. In India these goals are enshrined in the Constitution which envisages a society based on "justice, social, economic and political; equality of status and of opportunity" and it enjoins the State to endeavour to promote among all citizens, "fraternity, assuring the dignity of the individual and the unity and integrity of the Nation. The constitution also underscores the country's commitment to socialism, secularism and democracy.

1.8 The goal of independence was achieved in India through a prolonged struggle, during which, the far-sightedness of the leaders of the freedom movement resulted in the concretisation of socio-economic goals to be achieved after freedom. This vision envisaged the building of self-reliant nation through optimal utilization of the resources in men and materials, and the establishment of an egalitarian and tolerant society. It has been an article of faith amongst the policy planners in India that while economic strength and vitality determined the scope and quality of political freedom, for millions, the quality of freedom depends on the enhancement of production being accompanied by an equitable distribution of goods and services. This, it is recognised, is possible only through the expansion, dispersal and diversification of employment. In human terms, democratic development implies the availability of equal opportunities to all people, irrespective of caste, creed, sex and religion to develop their personalities. It implies access to knowledge and awareness of particular fields of Arts, Sciences and Humanities as also of values and tradition. It needs to be emphasised that the Indian polity has been characterised by a concern for the individual, not as a mere instrument of development but more essentially as an end in himself. In the Indian context, the concept of national development goes far beyond economic growth; it is concerned equally with the development of self-confident individual, with a strong commitment to democratic values, concerned with the creation of a nation united in purpose out of people speaking different languages, professing different religions and rooted in a variety of cultures. In a society which has chosen the democratic, rather than the totalitarian path of development, education has to be mainstay of all national endeavours.

Role of Education

1.9 To achieve the multiple but interdependent goals of personal,

economic, social, political and cultural development, it is necessary to make appropriate provision for integrated programmes of education for people who happen to be living at different levels of personal and economic development, possessing different linguistic, social and cultural attributes. Such programmes will have to have a common core curriculum to strengthen unity within diversity and also to facilitate mobility from one part of the country to another.

1.10 To enable the education system to play its role effectively in the proceeds of national development, along democratic lines, it is essential that besides ensuring that all people get the benefit of education, it should also be arranged that the level of educational attainments among people would not be too disparate between sexes, among social groups and across geographical regions.

1.11 If adequate measures are not taken for the spread of education, the chasm of economic disabilities, regional imbalances and social injustice will widen further, resulting in the building up of disintegrative tensions. Through proper education, the achievement of economic and social development can be facilitated and expedited. Human resource development has a multiplier effect on the utilisation of all other resources. That is why the concept of education as an investment in development has been increasingly accepted, and that is why, in 1966, the Report of the Education Commission (1964-66) referred to education as the only instrument of peaceful social change.

Priorities in Educational Development

1.12 Elementary education is the most crucial stage of education spanning the first eight years of schooling and laying the foundation for the personality, attitudes, social confidence, habits, learning skills and communicating capabilities of pupils. The basic skills of reading, writing and arithmetic are acquired at this stage. Values are internalised and environmental consciousness sharpened. This is the stage when physical growth can be assisted, interests in sports and adventure can be roused, and manual dexterity can also be developed. If a child goes through good education at this stage, he never looks back in life for he has been prepared to exercise his initiative to overcome difficulties.

1.13 Many studies have shown that in the field of education, investments in elementary education yield the highest rate of return and have a significant impact on productivity and the general well

being of the masses. The crucial role of universal elementary education for strengthening the fabric of democracy through the provision of equal opportunities to all for the development of their inherent individual potential, has been accepted from the very inception of our Republic in the form of Article 45 under Directive Principles of State Policy in the Constitution. This was reiterated in 1968, by the Resolution on the National Policy on Education. Removal of Adult Illiteracy has also been accepted as an imperative goal to be achieved through the implementation of broad-based, functionally relevant educational programmes. This is chiefly because literacy in its wider connotation ensures the awakening of the participant's interests in his environment and in processes and practices which can increase his productivity and greatly enrich his personal life. Almost all countries which have adopted a democratic form of government, have devoted pointed attention to the objective of achieving universal literacy through a mass movement involving the entire administrative and political apparatus and utilising the services of voluntary organizations, and indeed, of every educated person. Vocationalisation of the higher secondary level of education and vocational training through special institutions are also considered essential to provide manpower for economic growth, particularly for the maintenance of the infrastructure and for production technologies. In many ways the vocational dimension of education provides the link between the production function, employment and education processes. In the process of imparting vocational skills, the school system has to be integrated with its immediate environment and the community in which it is located.

1.14 Higher education has been given a place of special importance because it can provide ideas and men to give shape to the future and also sustain all the other levels of education. The quality of life and pace of development of any nation depends on the ideological climate; the widespread perceptions of history, culture, tradition and values; and the feeling of confidence in human capability to overcome material, social and spiritual problems of living. Higher education, and the intelligentsia nurtured by it have a special role in determining the quality of the overall environment. Higher education also supplies a wide range of increasingly sophisticated and everchanging variety of manpower needed in industry agriculture, administration and services. The self-reliant and indigenous character of an economy can only be maintained when competent people are available to foresee, plan and execute research and development activity, necessary to keep India

abreast of developments elsewhere in the world.

1.15 Equity, quality and relevance are of particular significance in planning the development of the education system. The report of the Education Commission (1964-66) laid stress on this aspect in the following words:

"Quantitatively, education can be organised to promote social justice or to retard it. History shows numerous instances where small social groups and elites have used education as a prerogative of their rule and as a tool for maintaining their hegemony and perpetuating the values upon which it has rested. On the other hand, there are cases in which a social and cultural revolution has been brought about in a system where quality of educational opportunities is provided and education is deliberately used to develop more and more potential talent and to harness it to the solution of national problems. The same is even more true of the quality of education. A system of university education which produces a high proportion of competent professional manpower is of great assistance in increasing productivity and promoting economic growth. Another system of higher education with the same total output but producing a large proportion of indifferently educated graduates of arts, many of whom remain unemployed or even unemployable, could create social tensions and retard economic growth. It is only the right type of education, provided on an adequate scale that can lead to national development; when these conditions are not satisfied the opposite effect may result."

Limitations of the Education System

1.16 It seems appropriate that a discussion on the role of education in general, and various levels of education in particular, should be followed by a recognition of the limitations of the education system. Otherwise, the education system might be blamed for shortcomings beyond its control. An education system does not operate in a vacuum. It is greatly influenced by the characteristics of the environment. Education cannot maintain its excellence or its democratic character unless the policy makers, planners and administrators are willing and able to support its thrusts in these directions. Neither the human nor the financial resources would be forthcoming for supporting educational initiatives unless these decision makers are convinced that

education is a crucial input for future development.

1.17 Educational planning can start in a meaningful fashion only when the decision makers in a society have spelt out its quantitative, qualitative, spatial and temporal objectives and also enunciated the manner in which the demands of equity and excellence would be met and the priority that would be accorded to them within the tight constraint of resources. While deciding these fundamental issues, alternative scenarios have to be considered in the light of constraints not only of financial resources but also of the political, social, cultural and organisational milieu. Since education is concerned with the future, its organisation has to be deliberately and purposefully forward looking and reasonably protected from the rough and tumble of current populist politics. This cannot be ensured by education planners alone. The consensus and the will for protecting education has to be created by opinion makers and leaders of public life.

1.18 While the content and methodology of education can be determined on a priority basis for the development of individual personality, in so far as the specific tasks in respect of technological, economic and societal goals are concerned, education must respond to the imperatives flowing from the nature and direction of national development.

1.19 It must be recognised that every policy framework inevitably carries a price-tag with it. If the cost of universalisation of education or the building of institutions of excellence has an expensive price-tag, a much heavier price has also to be paid for the default option of "no change".

1.20 There is no denying the fact that India has made considerable progress since Independence in terms of increase of all types of institutions, volumes of enrolment and the sophistication and diversification of educational programmes. It has, however, not been possible to meet the nation's aspirations in respect of overall coverage, equitable distribution and quality of education.

1.21 There is no gainsaying the fact that, at its best, school, college and university education in India has produced scholars, engineers, technologists, doctors and management personnel of a quality comparable with the very best products of the best universities of the world. However, it is also true that, against this small minority of quality products, the preponderant majority come out of institutions of higher education, perhaps with a little more of book learning and of course

a degree, but with a very little capacity for self-study, poor language and communication skills, a highly limited world-view and hardly any sense of social or national responsibility.

1.22 Even amongst the gifted, with their sharper perceptions, who get the opportunity of studying in institutions of excellence like the IITs or IIMs or the Medical Colleges, at very little cost to themselves, there is no evidence of the expected commitment to social responsibility. The same applies to the products of better quality schools. In fact this problem at the school level is even more acute because few elite schools concern themselves with developing a sense of social obligation amongst their pupils. The result is that not only an opportunity has been lost to create in the students, during their formative years, sensitivity to pain and poverty but the result is a kind of snobbishness which distances the products of these schools from the realities of their environment.

1.23 No description of the contemporary educational scenario can be complete without a reference to the examination system since it decides, not only the fate of students, but also the content, orientation as well as the quality of education at all levels. Apart from evaluating examinees on the basis of rote learning and memorising, their annual periodicity creates an environment in which students tend to while away their time for most part of the year and gear themselves to work for the last three or four months. For obvious reasons, lack of continuity in application results in the building up of unbearable pressures at the end of the year which find expression in boycott of examinations, leakage of question papers, mass-copying, payment of bribes to evaluators and other practices. Consequently, degrees and grades do not generally command credibility as a while with the public as well as employers in the public and private sectors and the whole process of higher education has become warped, disoriented and dysfunctional, producing a large number of unemployable young men and women.

Values and Modernity

1.24 Thoughtful people in all walk of life are greatly disturbed by a progressive erosion of values and the resultant pollution of public life. The fact that this crisis of values is as pervasive in schools, colleges and universities, amongst teachers as well as students as in orhter walks of life, is seen as a highly dangerous development. It is, therefore, being urged that the process of education should be reoriented and

young people should be made to realise that exploitation, insecurity and violence cannot be contained nor can an organized society be sustained without adhering to and enforcing some norms of social, political and economic behaviour. Learning from past experience, it is expected that a coherent and an operationally viable value system would be inculcated through educational processes, based upon rationality and a scientific and moral approach to life.

1.25 Despite the cultural cohesion which has characterised the Indian sub-continent for centuries, India's political unity got established only through the struggle for independence. This sense of national integration has recently been under considerable strain because of divisive forces arising from caste, religious and regional considerations. Therefore, there is a widespread demand that effective counter-measures must be taken to educate people about the freedom struggle, the value of national cohesion, the danger of communal and caste fragmentation and the need to strengthen the composite culture of India to which people with diverse backgrounds have contributed. It is felt that the present scenario is an indication of the failure of the education system and at least, from now onwards, every effort should be made to see that the coming generations will be immunised against separatist tendencies.

1.26 Neither an individual nor a nation can survive without a sense of self-confidence and pride. It appears that very few people know that as Indians, they have a great deal in their past and present to justify their feeling equal to anyone in the world and striving to match their performance with the very best people in the developed countries. India obviously cannot enter the twenty first century with a bowl-in-hand psychology. Immediate efforts must, therefore, be made to bring home to the young their duty to realise their full potential.

1.27 There is a strong feeling in the country that the mass of young people leaving schools, colleges and universities continue to regard manual activity and vocational employment as something inferior to the most routinised clerical work. In a society seeking to move into the world of modern technology, this essentially feudal attitude can be a terrible handicap. Developed countries have moved far away from such inhibitions and Indians too must shed such outmoded notions. This can be achieved nobly by ensuring that no one will be able to complete his schooling without having to work usefully with his hands and imbibing the concept of dignity of labour.

1.28 It is becoming clear everyday that if India has to maintain even

its present status amongst nations, it must, in addition to cutting down drastically on the rate of growth of population, arrange to ensure that a large enough section amongst the coming generation will have the capability to deal with the technological revolution already transforming, not only the modes of production, transportation, communication and management, but also behavioural patterns as well as organisational systems and the cultural milieu. The existing centres of excellence in higher education must be modernized and new ones established to take care of our critical requirements of enlightened, sophisticated and creative manpower. It must also be ensured that the total environment is also transformed through widespread diffusion of a modern and scientific outlook. Without a qualitative change in the environment, centres of excellence will be smothered by the sheer mass of a tradition-bound, 'slow moving, and generally passive population.'

1.29 It has been noticed that the vast majority of students are not exposed to challenges which would develop their potential for creativity and innovation because the whole system of education is characterised by class work and examinations which emphasise rote learning and repetitive exercises. Undoubtedly, this will require the overhaul of pedagogic methodology as well as the curricula and textual materials. These, however, will not be enough. Something will have to be done to change the orientation, work-ethic, knowledge and skills of the teachers, who will have to function much more creatively in a learning rather than a teaching environment, in which they will have to struggle continuously with new ideas as well as new technologies.

1.30 When the variety of tasks entrusted to education are taken into consideration, it becomes obvious that total harnessing of the massive nation building potential of our vast manpower will not be possible unless children participate massively in the educational programmes appropriate to their ages. This means that the achievement of universalisation of elementary education is no longer a matter of choice. But achieving universalisation depends not only upon the establishment of greater relevance of educational methodology and content to life, but also on the perception of parents about the adult population in functionally relevant education will, therefore, have to be launched.

Towards a New Education Policy

1.31 In a constitutional structure in which the States play a crucial

role in development, it is necessary to demarcate the responsibilities to be borne by the Central and the State Governments in respect of various aspects and levels of education. This is particularly so, in the context of education now being in the Concurrent List. In this context, the question of overall resources as well as the assignment of these to different levels of administration will have to be considered.

1.32 The initiative to review the present quantitative and qualitative status of education is essentially a reflection of a widespread feeling that many things have changed over the last twenty years, some for the better and others for the worse. As will be seen in the subsequent sections of this paper, many of the changes required in education were anticipated by the earlier committees and commissions, especially the Education Commission of 1964-66. Perhaps, the problems of today are more the result of tardy and haphazard implementation and a progressive decline in the allocation of resources. It is, therefore, envisaged that the New Education Policy should articulate the educational imperatives not only in terms of objectives, concepts and priorities but it should also spell out an operational strategy with the associated financial, material, organisational and human requirements to achieve the long and short term objectives set forth in the policy. If a radical change in educational policy is agreed upon, equally radical instruments and organizational structures will have to be devised to give it practical shape.

1.33 A National Policy of Education has to emerge from the perceptions, active participation and the wisdom of all those who are likely to be involved in its implementation. The States, local bodies, voluntary agencies, teachers, students and parents, scientists, managers, entrepreneurs and workers, parliamentarians and legislators and indeed the members of the Fourth Estate will have to contribute to the process of policy formulation.

THE LEARNING PROCESS

Theories of Learning Relevant to Higher Education

P. NIRMALA DEVI

The main purpose of education is to influence the development of an individual to produce personal qualities of physical, social, intellectual and emotional readiness to meet the complex life situations. Education functions in an atmosphere which is determined by the values, interests, attitudes and aptitude of the pupils, teachers, and administrators. The pupil's receptivity of the subject matter depends upon his 'set' while the teachers and administrators with their particular objectives and biases determine the material and procedures of the educational process. Today, the educational psychologist should spell out the objectives in terms of behaviours to be developed. Further, he should devise techniques and use appropriate tests in order to assess the outcomes of instruction, that is, to understand to what extent the educational values had been met with.

The purpose of teaching is to help individuals to learn. Each individual, however, learns from his own experiences and efforts. The duty of a teacher is to inspire a student who wants to learn and to guide him in experiences from which he may learn a fact an attitude or a skill. But the teacher cannot learn it for him. Each individual should learn for himself. An effective teacher is one who develops his own ways of recognizing the needs felt by his pupils and guiding them through experiences designed to result in learning which will fulfil those needs. What a teacher should teach at a given moment cannot be readily determined by an absolute scientific formula. It

involves a lot of thinking, analyzing and understanding of the individual placed in a situation which is made with the help of all the teacher knows about how individuals learn, pupils are ready to learn and how he helped his students to learn similar things in comparable earlier situations. Thus, a successful teacher is dynamic in evolving solutions which are unique to individuals, situations and problems, and an interaction of these two.

To impart skills to learn the teacher should be clear with the basic definition of what learning is. Learning is one of the most important concepts of psychology and yet it is extremely difficult to define. Kimble (1961, p.6) defines learning as a relatively permanent change in behavioural potentiality that occurs as a result of the reinforced practice. Learning is, therefore, indicated by a change in behaviour. It means, the result of learning must always be translated into observable behaviour. After learning, the learner is able to do something which he could not do before learning took place. Further, this behavioural change is said to be relatively permanent which means that it is neither transitory nor fixed. Though there may be a potential to act differently, this potential to act may not be translated into behaviour immediately. The change in behaviour or behaviour potentiality results from experience or practice. Lastly, the experience or practice must be reinforced, i.e., only those responses that lead to reward will be learned.

To learn means to gain knowledge through experience. Thus, learning is referred to as acquired knowledge. Acquisition refers to a change in possession. Learning, therefore, is the change in a subject's behaviour or behaviour potential to a given situation brought about by the subject's repeated experiences in that situation, provided that the behaviour change cannot be explained on the basis of the subject's native response tendencies, maturation, or temporary states (such as fatigue, drunkenness, drives, and so on).

With this definition of learning, it may be apt to briefly review the existing theories of learning. Experimental investigation in the nature of learning has developed only in this century. The study of its application to problems of learning and teaching of subjects has hardly begun.

The Conditional Reflex

The first and the most important experiments which gave the major

impetus to theory-building in learning were those started by the Russian physiologist, I.P. Pavlov (1849-1936). As early as 1880, he carried out the investigations into the digestive systems of dogs, and found that the animal salivated not only when food was placed in his mouth, but when it saw the food. The function of saliva is to facilitate the digestion of food and the natural stimulus to produce salivation in the presence of food in the mouth. The animal had learned that the sight of food would soon result in it being given something to eat. It might appear simple, but it is the beginning point for much of modern learning psychology.

Pavlov refined his experimental procedures to accurately measure the strength of the acquired response. The dog was placed in a harness in a specially designed room which was free from extraneous stimuli. A neutral stimulus, such as ringing of a bell would then be presented followed by food which would induce salivation in the dog. After a number of presentations, the dog would salivate when the bell was rung. Pavlov drops of saliva secreted.

Pavlov noticed that the natural response of salivation to food in the mouth was stable while the acquired response of salivating to a previously neutral stimulus was unstable and likely to extinguish if not followed by presentation of the natural stimulus. Because of instability of the acquired response, Pavlov called it a conditional response. He called the natural response, an unconditional stimulus. The pattern of stimulus followed by response is called a reflex. Thus, salivating to the presence of food in the mouth is called an unconditional reflex whereas salivating to the sound of a bell is a conditional reflex.

Pavlov continued his experiments over a long time and extensively studied conditioning principles which dealt with the acquisition and lapsing of conditional reflexes. This simple conditional reflex has relatively little significance and relevance in the class-room. But, the study of laws which determine the waxing and waning of complicated patterns of conditional reflexes will enable us to have insight into some of the ways in which learning can be facilitated. Further, the most significant contribution of conditioning has been to provide us with scientific evidence to develop a theory of learning. For example, Hull's theory which will be discussed later, is formulated directly from Pavlov's conditional reflex principles.

Trial and Error

At about the same time as Pavlov was carrying out his experiments, E.L. Thorndike (1874-249) in America was studying learning in cats. The most characteristic form of learning of both lower animals and man was identified by Thorndike as Trial and error learning, or as he called it later, learning by selecting and connecting. The typical experiment of Thorndike is one in which a hungry cat is placed in a confining box. Some sort of releasing mechanism - a loop of a wire, a handle, a knob - would be mounted inside the box. When it is manipulated, the door would fall open, and permit the animal to escape confinement and get a bite of food just outside the box. In the first few trials, the cat exhibits an apparently random activity, scratching and trying to escape to get the food. In the course of its attempts, it accidentally operates the release mechanism which allows it to escape and obtain food. Subsequent trials find their activity less random and concentrated on the part of the box near the release mechanism. The time taken to escape decreases until the animal eventually operated the release as soon as it finds itself in the box. Thorndike's experiment was said to be an example of trial and error learning. 'Learning is connecting' according to Thorndike while Pavlov called it temporary connection meaning conditional reflex.

Based on his experiments, Thorndike suggested certain laws which according to him, would apply for the learning of organisms, human and non-human. The most important one of those is the Law of Effect. It goes as follows: "Of several responses made to the same situation, those which are accompanied or closely followed by satisfaction to the animal will, other things being equal, be more firmly connected with the situation...; those which are accompanied or closely followed by discomfort to the animal will, other things being equal, have their connections with that situation weakened" (1911, p.244). Successes or failures, rewards or nonrewards are thus proposed as mechanisms for selection of the more adaptive response. This principle is much similar to the mechanism of natural selection by successful adaptation or survival of the fittest, which forms the basis for Charles Darwin's theory of the evolution of species.

Thorndike on Education

Thorndike taught in a school of education (training teachers) and so was constantly faced with the challenge of applying his theory to

educational policies. He was an educational scientist by temperament and rejected the vague philosophical issues surrounding many educational practices. He asserted that there should be a close relation between the knowledge of the learning process and teaching practices. Thus, he argued that discoveries about the nature of learning should be readily applied to improve teaching practices. According to Thorndike (1913), the amount of transfer between the familiar situation and the unfamiliar one is determined by the number of elements that the two situations have in common. This is Thorndike's famous identical elements theory of the transfer of training. According to him, when an individual is confronted with a new situation, his habits do not then retire to some convenient distance while some new and mysterious entities direct his behaviour. On the contrary, nowhere are the bonds acquired with old situations more surely revealed in action than when a new situation appears. Since all the educational centres are attempting to influence the way students behave outside of school, college or university, the problem of the transfer of training is a central one for educators. Thorndike urged that the curriculum in schools and colleges be designed to include subjects that would be identical with those the student will be asked to perform after he leaves a school or college. Therefore, the study of mathematics, physics or logic should be included not because it strengthens the mind, but because the student will be actually using these subjects when he leaves school. According to Thorndike, education should emphasize the direct training of those tasks and skills which are important beyond school. Thus, the transfer of identical elements theory was his solution to the problem of how we respond to a novel situation and to the problem of integrating education and actual life experience. Such an approach would ensure to develop an individual's own potentialities for living a life that is both self-satisfying and satisfying to his fellow men.

Thorndike had a poor opinion of the lecture method of teaching and hence his thinking ran contrary to traditional approach about education. According to Thorndike (1912), lecture method involves conclusions which are of little practical significance. He further says that the pupil is expected to understand the questions which the teacher did not himself frame, and answers which he did not himself work out.

Thorndike (1922) says that a good teacher is one who knows clearly what he should teach, what materials are to be presented, what responses are to be looked for, and when he should apply rewards. Further, he formulated certain guidelines for effective teaching: The

situation which the pupil faces should be taken into account. The appropriate response to be connected with the situation should be considered, and the bond should be formed. Other things remaining equal, the bond which will have to be broken should not be formed. Similarly, other things remaining equal, two or three bonds should not be formed when one will serve the purpose. Lastly, Thorndike advises educators to favour those situations which itself will offer, and the responses which life itself will demand.

Thus, Thorndike would have an orderly classroom with well defined objectives. These educational objectives must be within the pupil's response capabilities and they must be divided into manageable units so that the teacher can apply a "satisfying state of affairs", when the learner makes an appropriate response. The learning situation must resemble the "real life situation" as far as possible as Thorndike believed that learning will transfer from the classroom to the environment outside the class only when the two situations are similar. Further, Thorndike discounted the concept of motivation except in determining what will constitute a "satisfying state of affairs" for the learner. The learner's behaviour is determined primarily by external rewards and not by intrinsic motivation. Education should emphasize in bringing about correct responses to certain stimuli and correcting the incorrect responses rapidly so that the incorrect ones are not practised and thereby strengthened. Hence, examinations are of utmost importance as they provide the learner and the teacher with feedback concerning the learning process. Thus, Thorndike championed the clear statement of educational objectives and made factual resolutions wherever it was possible. Therefore, he gave great impetus to the scientific movement in education, arguing that educational policies be regulated keeping in view the verified outcomes of specific policies.

Need Reduction

It was C.L. Hull (1884-1952), another American Psychologist who built upon the work of Thorndike and Pavlov. His argument was that learning takes place through a process of 'need reduction'. A hungry animal reduces its need for food by pulling the release in the cage: If a stimulus leads to a response and if the response results in the satisfaction of a biological need, then the association between the stimulus and the response is strengthened. Thus, the activity which results in the reduction of a need is said to be reinforced. In this respect,

Hull is in complete agreement with Thorndike's Law of Effect. Primary reinforcement, according to Hull, should involve need satisfaction, or what Hull called drive reduction. As the number of reinforced pairings between a stimulus and a response goes up, the habit strength of that association goes up. Hull further said that habit strength gets generalized from one stimulus to another to the extent that the two stimuli are similar. It means that prior learning will influence current learning. Learning that took place under identical conditions, will transfer to the new learning situation. Hull termed it generalized habit strength which is similar to Thorndike's identical elements theory of transfer of training.

Biological deficiency produces a drive state in the organism. Hull introduced the term 'reaction potential' which is function of both habit strength and drive. In order for a learned response to occur, the habit strength has to be activated by drive. Therefore, if an animal has learned to operate the release mechanism in order to obtain food, he would do so only when he was hungry, no matter how well he was trained. Thus, reaction potential is a function of how often the response was rewarded in that condition and the extent to which a drive is present.

Responding to a stimulus requires work and work produces fatigue. Fatigue eventually results in inhibiting the response which is called reactive inhibition, according to Hull. Since reactive inhibition is caused by fatigue, it automatically dissipates when the organism stops performing. This concept explains the spontaneous recovery of a conditioned response after extinction. Extinction, according to Hull, is not merely a function of non-reinforcement, but it also is influenced by the building up of reactive inhibition. Reactive inhibition helps to explain the reminiscence effect, which is the improvement of performance following the cessation of practice.

Implications for Education

Learning for Hull must involve a reducible drive. It might be hard to visualize how the drive reduction theory can play a part in classroom learning. However, some of Hull's followers have emphasized anxiety as a drive in human learning. From this line of reasoning, it would follow that encouraging optimal anxiety in students, would be a necessary condition for classroom learning. Too little anxiety would result in no learning as there is no drive to be reduced while too much anxiety would be disruptive. Thus, students who are moderately

anxious are in the best position to learn and master a skill.

Hull's notion of reactive inhibition, being related to the amount of work involved in performing a task and hence caused by the fatigue associated with work, has relevance to classroom learning. An additional support for Hull's notion of reactive inhibition comes from research findings on the difference between massed and spaced practice. It is consistently found that when practice trials are spaced for apart, as in distributed practice, performance is superior to what it is when practice trials are close to one another (massed practice). Therefore, practice should be carefully distributed so that inhibition would not be built up. In view of this fact, the teacher should intersperse subjects so that the pupil would not build up fatigue that would interfere with his learning. Similarly, subjects which are maximally dissimilar should be arranged in a sequential order: for example Maths, Physical training, English, Art, History, Science, etc. Such an order of learning subjects would minimise fatigue and facilitate span of attention of the learner. Miller and Dollard (1941) have summarized Hull's theory as it applied to education:

Drive	: The learner must want something.
Cue	: The learner must attend to something.
Response	: The learner must do something.
Reward	: The learner's response must get him something he wants.

Instrumental Conditioning

B.F. Skinner (1962) in America has investigated the effect of the manipulation of reinforcement of various organisms in a series of most interesting experiments. Thorndike, Hull and Skinner all approach learning in a similar manner. Their work may be fitted into the broad category of what is called instrumental conditioning or operant conditioning. Skinner identified two types of behaviour: respondent behaviour, which is elicited by a known stimulus and operant behaviour which is not elicited by a known stimulus but is simply emitted by the organism. Skinner does not say that operant behaviour occurs independently of stimulation; rather he says that the stimulus causing such behaviour is not known and that it is not important to know its cause. Thus, while respondent behaviour is dependent upon the stimulus that preceded it, operant behaviour is controlled by its

consequences.

Skinner formulated two principles associated with instrumental conditioning: (1) any response which is followed by a reinforcing stimulus (reward) tends to be repeated; and (2) a reinforcing stimulus (reward) is anything that increases the rate with which an operant response occurs. In other words, a reward is anything which increases the probability of response's recurring. The rat in the Skinner box obtains food because he presses the lever. The pressing response is instrumental in producing a reinforcer (food) which then acts as a stimulus (S_2) for response R_2 (salivation). When the pellet of food is not sufficient to satisfy the animal, it continues its investigatory behaviour until it once again operates the lever and produces food. It will, eventually, continue to press the lever until it is satiated. This process exemplifies contingent reinforcement, because getting the reward is contingent (dependent) upon the organism's emitting a certain response. The principles of operant conditioning have an important bearing on human learning and they can be applied to a variety of situations.

Implications for Education

Skinner insists that the course objectives should be clearly specified. Further, he insists that the educational objectives should be defined behaviourally. Translating the objectives into specific behaviours would enable the teacher to know whether he has accomplished what he had set out to achieve. Thus, a teacher who wants to impart autonomy in pupils, should be clear with the behaviours that are associated with autonomy. He should then observe the pupils whether they are manifesting such behaviours and reinforce accordingly. Motivation, according to Skinner, is only important in determining what will act as a reinforcer for a given student. Skinner defined secondary reinforcer as one which is any neutral stimulus paired with a primary reward (e.g. food or water) and which takes on reinforcing properties of its own. Secondary reinforcers, according to him, are important since they are normally used in academic setting. Examples of secondary reinforcers would include social recognition, feelings of success, vocational opportunities, the opportunity to work on what one wants to, feelings of satisfaction, etc. Education is an applied science since it is concerned with the realization of certain practical ends which have social value. Education viewed in such broad sense, covers our

attitudes, interests, values, behaviours, adjustment and the whole personality make up in general. Skinner thought that the same principles of reinforcement would very well apply to the development of human personality. According to him, we are what we have been rewarded for being. What we call personality is nothing but a set of consistent behaviour patterns which summarize our reinforcement history. Thus, learning of a particular language, a habit formation, a specific adjustive mechanism are all the results of being rewarded in some way. If one controls reward, one can also control behaviour. Thus, behaviour is being influenced by reward whether we are aware of that fact or not. Since the very purpose of education is to guide the individual toward meeting his practical ends which are satisfying to himself and to the society, it should aim at intergrating the classroom situation and the real life experience. Thus, the curriculum should have practical utility so that it appears relevant and meaningful to the individual even after he leaves the educational setting. In Skinner's terms, such education becomes a rewarding experience to the individual.

Skinner (1958) rejected the traditional lecture method since there is no way of knowing when learning is taking place and also because it does not allow for individual differences in learning rate. Instead he suggested to deal with students individually, or provide a group of students with material which allows for individual self-spacing, such as teaching machines or specially constructed workbooks. He called it programmed learning. Skinner thought that learning proceeds most effectively if (1) the information to be learned is presented in small increments; (2) the learner is given rapid feedback concerning the accuracy of his learning; (3) the learner is able to learn at his own pace. Thus, programmed learning induces sustained activity in the learner while lecture method makes the individual passive. Thus, Skinner very well applied his theory of learning to the process of education.

Continuity

E.R. Guthrie (1952) proposed the principle of continuity according to which a combination of stimuli which has accompanied a movement will on its recurrence tend to be followed by that movement. He also proposed all-or-none principle which means that learning occurs in the first trial or it does not occur at all. Thus, Gurthrie (1942) says

that a stimulus pattern gains its full associative strength on the occasion of its first pairing with a response and he called it one-trial learning. Guthrie accounted for the improvement in performance due to practice by differentiating skills, acts, and movements. Movements, according to Guthrie, are simple muscle contractions which act are made up of a large number of movements. A skill is made up of several acts together. The relationship between one set of stimuli and one movement is learned at full strength in one trial, but it does not result in proficiency at a skill. It is because, it takes time and practice for all the necessary associations to be formed.

Implications for Education

Guthrie begins the educational process by clearly mentioning objectives, that is, by stating what responses are to be made to what stimuli. The learning environment is arranged so that the desired responses are elicited in the presence of the stimuli that they are supposed to be attached to. Guthrie did not give importance to the motivational factor. All that is essential is that the pupil should respond appropriately in the presence of certain stimuli. Guthrie would advise a college student that he should practise in exactly the same situation in which he is going to be tested. According to Guthrie, all the stimuli in that room will be associated with the information that he is studying. Therefore, for a student to be successful in his examination, the conditions under which the pupil studied should be similar to the conditions under which he was examined. Therefore, Guthrie advises the student to practise the exact behaviours that are going to be demanded of him. Further, he should practise them in the exact conditions under which he will be tested.

Guthrie accepted Thorndike's identical elements theory with regard to the transfer to training. Thus, the probability of eliciting a similar response to two different situations is determined by the degree of similarity between the two situations. Guthrie believed that we learn what we do. A student does not learn what he hears from a lecture or reads in a book but learns only what the lecture or the books made him to do. Therefore, Guthrie slighted the role of insight, thinking or understanding in learning. He argued that incorrect responses are learned just as quickly as the correct responses. The only law of learning, according to him, is the law of continuity which states that when two events occur together, they are learned. Guthrie felt that

classroom education is essential to purposefully associate certain stimuli and responses, although learning is a continuous process which constantly occurs. Like Thorndike, Guthrie firmly believed that formal education should resemble real-life situations as much as possible so that it may prepare the individual to meet the challenges made on him during various phases in his life.

The above-mentioned theories—namely those of Pavlov, Thorndike, Hull, Skinner and Guthrie may be broadly grouped together as associationistic theories. Learning, according to them, occurs through contiguous association of events or ideas. Associationistic theories may be classified into stimulus—response theories and cognitive theories. The just-mentioned associationists would fall under the category of stimulus-response theorists while E.C. Tolman was basically an associationist and was the first systematist of cognitive theory. The fundamental difference between the stimulus-response theorist and cognitive theorist is that the former talks about habits being learnt while the latter emphasizes factual knowledge or cognitive structures being acquired. Further, the stimulus response theorist believes that past solutions to the problem and acquired habits have a bearing on the current problem-solving methods whereas the cognitive theorist looks into the contemporary structuring of a problem and depends heavily upon such concepts as insight and organization.

Purposive Behaviourism

Tolman (1886-1959) systematically studied molar behaviour. The important characteristic of molar behaviour is that it is purposive. It means, it is directed toward a definite goal. Therefore, Tolman's theory has been referred to as purposive behaviourism because it attempts to interpret goal directed behaviour. Unlike other associationists, Tolman chose to systematically study molar behaviour, meaning large, intact, and meaningful behaviour patterns. He believed that he could be objective while studying molar behaviour and he dealt with observable stimuli and overt responses. It may be said that Tolman was methodologically a behaviourist, while he studied behaviour in order to understand cognitive processes. Tolman (1932) stated, "For a Purposive Behaviourism, behaviour, as we have seen, is purposive, cognitive, and molar, i.e., 'Gestalted'. Purposive Behaviourism is molar, not a molecular, behaviourism, but it is nonetheless a behaviourism. Stimuli and responses, and behaviour determinants of

responses are all that it finds to study "(p.418)". There is a similarity between Guthrie and Tolman. Guthrie believed that behaviour persisted as long as the maintaining stimuli were being provided by some need state. For Tolman, behaviour appeared to be goal directed as long as the organism sought something in the environment. Tolman argued that learning is essentially a process of discovering what leads to what in the environment. The organism, through exploration, discovers that certain events lead to certain other events, or that one sign paves way for another sign. Therefore, Tolman later designated his theory as *signgestalt theory*, or an *expectancy theory*.

Learning, for Tolman, was continuous process which required no motivation. On this aspect, Tolman agrees with Guthrie and disagrees with Thorndike, Skinner and Hull. However, motivation seemed to play an important role in Tolman's theory, because it determined which aspects of the environment had to be attended to by the organism. It is usually the organism's drive state which determines which aspects of environment will be emphasized in his perceptual field. Before attending to various aspects of the environment, the organism first develops a picture of the environment, which Tolman called a *cognitive map*. The next step involved in learning is to get acquainted with the various possible routes to reach a goal. Tolman says that the organism's first preference is the route requiring the least amount of work. He called it the *principle of least effort* which appears to be similar to Hull's notion of the *habit hierarchy*. Hull says that the organism prefers the shortest route because it has the shortest delay of reinforcement.

Implications for Education

Tolman emphasizes the role of thinking, organizing and understanding in education. He advises pupils to test hypotheses in a problem situation. As regards this viewpoint, Tolman comes closer to Harlow's error factor theory according to which learning is not so much a matter of building up correct responses or strategies as it is a matter of eliminating incorrect responses or strategies. Tolman would encourage small groups for classroom discussions since they would permit the student to have opportunity, individually or as part of a group, to test the adequacy of his ideas empirically. Hypotheses or strategies effective in solving a problem are those that are maintained by the pupil himself. The teacher acts, only as guide to assist students in clarifying and then confirming or disconfirming the hypotheses.

Tolman suggests that the students should be exposed to a topic from different viewpoints. This would facilitate the student to get a "cognitive map" which could be applied to answer questions about that specific topic and related fields. Further, he emphasizes on practical knowledge which brings education close to day-to-day life situations. Such knowledge equips the individual with necessary information to act when a need arises. In a state of need, the organism utilizes what he has learned through reality testing to bring him into proximity to those things that will alleviate the need. Thus, according to Tolman, learning is a matter of transfer or transposition which is the application of a principle or concept learned in one situation to a new but similar situation and thereby suit to its purpose.

Educators have not made a systematic analysis of the applications to their work implied in Tolman's theory. Yet, it is evident that there is an agreement between Tolman's position and the teaching practices. Teachers do not use terms like 'cognitive structures' or 'molar behaviour', but they explain concepts while questioning them what they have understood, what each concept would mean to them, and what they would expect to be the outcomes. Thus, the problem-solving types of activities which are considered to be the best types of "learning experience" are highly valid which fall under the domain of purposive learning.

The Gestalt View

Gestalt psychologists could not accept that learning was connecting. Their work lay in the field of perception, i.e., the way in which we perceive things. The word 'Gestalt' means configuration or pattern. The Gestaltists hold the view that the significance of a situation or pattern of stimuli is in the total pattern, not in its separate elements. Werthimer is generally considered to be the founding father of Gestalt psychology. Werthimer said that when two optical stimuli are perceived by the human eye in quick succession, the reaction is one of simultaneous pattering. Werthimer called it the Phi phenomenon. Gestaltists accepted the introspective method in general. They felt that it should not be used to divide experiences but its aim should be to investigate the whole, meaningful experiences. It should be used to study how people perceive the world. Thus, a person's perceptual field consists of events that are organized and meaningful.

A field may be defined as a dynamic interrelated system, any part

of which influences every other part. The most important aspect about a field is that nothing in it exists in isolation. Gestalt psychologists use the concept of field at various levels. The perceived environment, for example, may be considered as a field, and the person himself may be thought of as a dynamic interrelated system. It means, the dynamic system, that is the learner is in constant interaction with these other systems. Gestalt psychologists believe that whatever happens to a person influences everything else about him. The emphasis, therefore, on totality or whole and not on individual parts.

Kurt Lewin (1935), an early Gestalt psychologist, used field theory to understand human behaviour. According to him, human behaviour is determined by the total number of psychological facts being experienced at any given moment of time. The psychological facts include factors like being hungry, being in a certain geographical location, being amidst certain people, etc. These psychological facts make up the person's life space. A change in any psychological fact rearranges the entire life space. Therefore, behaviour is continually changing and hence it is dynamic. The person exists in a continually changing field of influences, and a change in any one of them affects all others. This is what is called a psychological field theory. The learner, as one dynamic system, is part of the larger system, namely environment in which he is constantly interacting, hence adjusting, adapting, modifying, changing, or in other words learning.

The Gestalt psychologists were mainly concerned with perceptual phenomena. However, the main principle, which can be applied to all the principles, including principles of perception is the law of *Pragnanz*. Koffka (1935) defined the law of *Pragnanz* as follows: "Psychological organization will always be as good as the controlling circumstances permit" (p. 110). By 'good', Koffka meant such qualities as simple, concise, symmetrical, or harmonious. In other words, there is a tendency for every psychological event to be meaningful, complete, and simple.

Kohler, a member of the Gestalt school did the most famous work on learning between 1913 and 1917. He studied the problem-solving ability of apes and chickens. Kohler (1925) in one of his crucial experiments, placed an ape in a cage on the outside of which was a banana out of reach. At the other end of the cage, within the reach of the ape, was a stick. The problem would be considered solved when the ape picked up the stick and used it to secure the fruit. Kohler claimed that the ape reached the banana suddenly after studying the

total situation and not through random and undirected activity as it was the case of Thordike's trial-and-error learning experiments. The solution in Kohler's experiment was claimed to have been arrived at through an intelligent restructuring of the whole situation and Kohler called it 'insight'.

Gestalt psychologists believed that when an organism faces a problem, a state of cognitive disequilibrium is set-up and it continues until the problem gets solved. Cognitive disequilibrium is motivational in its characteristics and it attempts to regain the balance in the mental functioning of the organism. Cognitive psychologist opined that cognitive balance is more satisfying than cognitive imbalance. On this point Gestalt psychologists come closer to Hull. Problems provide maintaining stimuli (or drive according to Hull) which persist until the problem is solved and then the maintaining stimuli terminate (drive reduction). Further support for this point of view comes from B. Zeigarnik who found that memory for incomplete tasks is better than that for completed tasks. This is called Zeigarnik effect.

Koffka (1935) attempted to relate the past with the present through memory trace. According to the concept of trace, if the last thing a person did in a problem-solving situation was solving the problem the next time he in a similar problem-solving situation, the trace of the previous problem-solving situation influences the ongoing process, making the problem easier to solve. Thus, Koffka accepted the recency principle, which states that what an organism did last in a situation is what he will do if the situation recurs. Thus, there is an agreement between Guthrie and Gestalt school of thought.

Implications for Education

Gestalt psychologists' contribution to education lies in its concepts of the organization of stimuli and insight. The world of the classroom in which the pupil is living and learning is not just a body of discrete stimuli, nor are his responses to it those of trial-and-error learning. The world is organized and viewed in its totality thus giving meaning to the learner. The learner can respond with understanding and insight. Such an insightful learning is likely to be applied to other problems. Therefore, educators should emphasise learning based on insight since this would help to link classroom curriculum with real life experience. The process of learning and doing should go hand in hand to make the individuals independent and self-contained. Such a training would

help them face the problems of life both at the individual level and at the level of society. Since the Gestaltists stress meaningfulness and understanding of the subject as a whole, parts of the subject should always be integrated to give meaning to the student. Further, if the subject matter is related to the current events and if it is personally relevant to the student, the student is likely to concentrate with all his mental faculties to get an indepth view of the subject. It is at this juncture, the learner gets totally involved in the subject, and he learns not as mere responsibility on his part, but he enjoys the task of learning. It means, the individual's vocation and avocation are merged together resulting in the realization of one's potentialities. This is nothing but Maslow's concepts of self-realization.

Gestalt psychologists thought stimulus ambiguity results in a negative state in the individual which persists until the problem is solved. The individual in such a state tries to regain mental balance by either reorganizing the already existing information or seeking new information. The reduction of ambiguity results in the reduction of anxiety which can be thought of as an 'intrinsic' reward according to Gestalt psychologists while the behaviourists emphasize 'extrinsic' rewards.

The Gestalt-oriented classroom would be characterized by a give-and-take relationship between the teacher and the student. The teacher helps the student to see relations, to seek new information, to organize the available information into meaningful structures, and to achieve clarity until the student gains satisfaction to himself. Planning a Gestalt learning experience includes dividing the aspects of course work into meaningful units, and the units must be related to an overall experience. The Gestalt-oriented teacher would accept the lecture technique as long as it allowed for a good student-teacher interaction. According to Bruner (1966), the student is already motivated to learn and the teacher should encourage this inborn tendency in the student, especially the will to learn.

Critique

After going through the various aforementioned theories of learning, one may very legitimately ask why there are several theories of learning and why not a unified theory which gives a comprehensive understanding of learning process. Even though facts are accepted by all the psychologists, they may be liable to different interpretations.

All of human behaviour is exceedingly complex and learning is no exception. Further, each psychologist brings his own unique experience to any problem of interpretation and hence it results in different conclusions. Tolman (1949) says, "It may turn out the theory and laws appropriate to one kind may well be different from those appropriate to other kinds. Each of the theories of learning now current may, in short still have validity for some one or more varieties of learning, if not for all" (pp. 144-155). Katona (1940) has studied the learning of material of various amounts of organization and has shown that learning may be on a continuum from sheer rote memorizing to a high degree of organization. Hilgard (1956) has presented the idea of the 'provisional try' to describe the learner's reaction to a situation. The concept of 'provisional try' avoids the dichotomy of either trial-and-error or insight. If the learner is left with no clues for a choice, it is a trial and may be an error. If there are clues, the try may be such that it is called insightful. All theories start with the specificity of learning but provide somewhere for its generality. Learners do discriminate as well as generalize. All psychologists accept that transfer occurs. For example, Thorndike talks of transfer through identical elements. Hull has his concepts of stimulus generalization, and stimulus compounds, while Koffka talks about memory trace. Discrimination and generalization are, therefore, the essential aspects of effective learning.

Group Dynamics and Classroom Behaviour

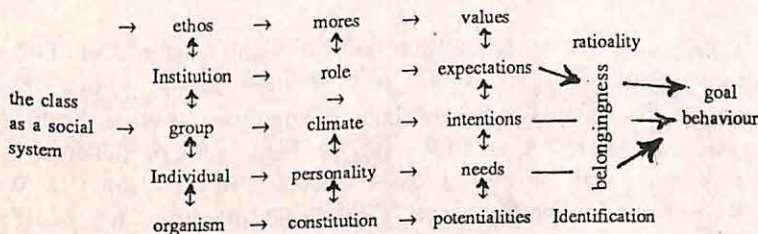
P.V. KRISHNA RAO
K.S. CHALAM

The classroom is a distinct social unit with its own set of norms, role relationships, expectancies and atmosphere. It does not operate in a vacuum. As a social unit it reflects the milieu of the large social system. Also, the teachers and students have their own needs and dispositions and the class room has its own climate.

The paper describes the classroom in a higher educational institution from a social psychological perspective, and considers the effect of group climate on individual behaviour, for a better understanding of the classroom dynamics.

Classroom as a social system

In recent years there has been a tendency among educators and psychologists to regard teaching as applied social psychology (Morrison and McIntyre, 1972) and to describe the classroom from both an individual and an institutional perspective, Getzel and Thelen (1972) sug-



gested the following model to understand, clarify and systematize important issues relating to classroom behaviour of pupils and teachers.

The classroom is inhabited by individuals whose constituent personalities and need dispositions are complex and different. Secondly, the structure and function of a classroom is usually well defined and it can be understood from the standpoint of the goals, roles and expectations of the individuals and the institution. However, it is important to note that both the individuals and institutions are influenced by the realities and ideologies of the social systems of which the college and the classroom are but the parts.

The classroom invariably reflects the personalities and needs of the individuals and the mores and values and the problems and prejudices of the institution and the society in general. The identification and sense of belonging the individuals have with the goals and expectations of the institutions and with their fellow students determine the interactions in the classroom.

According to Getzels and Thelen (1972) in an ideal classroom

- "(1) Each individual *identifies* with the goals of the systems so that they become part of his own needs.
- (2) Each individual believes that the expectations held for him are *rational* if the goals are to be achieved.
- (3) He feels that he *belongs* to a group with similar emotional identifications and rational beliefs." (p.32)

This model helps the teacher to understand himself, his students and the classroom dynamic in general. An application of this model, however, requires the teacher to exercise 'sociological imagination' (Mills, 1959).

The ideal classroom is seldom present in our social context. The ethos and the intricacies of our social system are reflected more in classroom behaviour in higher educational institutions than at the lower levels. The conflicts between the teachers and students, and among the students and the deviating behaviours of both the teachers and students from what is expected of them, is but a reflection of the outside world.

In view of the roles and responsibilities of the teacher according to the structure of the classroom, it is workable to assume that the nature of the group in the classroom is largely determined by the teacher, and his responses to the specific behaviours of students.

To Getzels and Thelen (1972) the judgment of the teacher as to how to respond in the classroom "depends not merely on his ability

to perceive the behaviour to which he is responding as an immediate act but to look behind the act and to comprehend the behaviour as a transaction within the social system as a whole. For it is within this sort of comprehension that not only the particular group but the particular individual within the group can be most readily understood. And it is through this understanding that the teacher can wisely judge how to respond" (p.33)

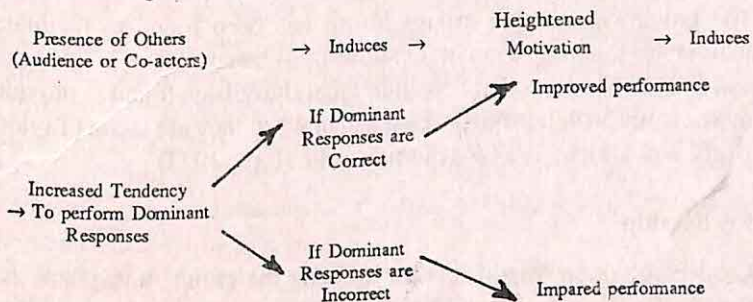
Group dynamics

The classroom as a collection of individuals with a purpose represents group situation. The behaviour of individual students is affected in many ways by the group climate of the classroom. Social psychologists have examined a number of influences of the group on the individual members. The following is an account of some of these influences which are very relevant to understanding certain classroom phenomena.

The behaviour, thoughts and feelings of an individual are influenced by the presence of others. A number of researchers investigated the impact of the group on individual performance of various tasks. The presence of others who can observe and possibly evaluate is also an important factor in the classroom.

Social facilitation

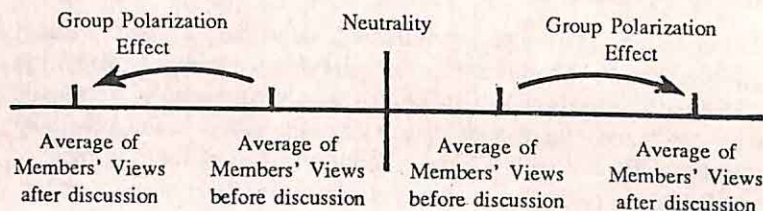
The studies of Zajonc (1965) and others indicated that the presence of others induces increased motivation in an individual and enhances the tendency to perform the dominant response. If the dominant response is correct as perceived by the individual, his performance is improved, and if it is incorrect it is actually impaired. This is largely due to the concern over being evaluated or judged by others and anticipation of positive or negative outcomes in the presence of others. The following is a representation of Zajonc's theory.



Group polarization

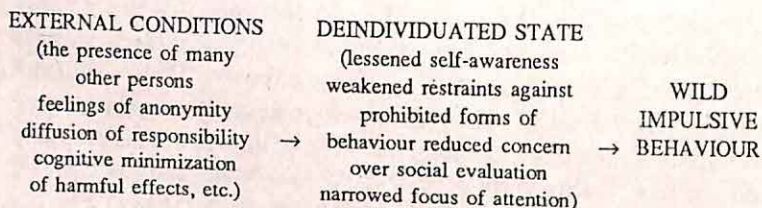
It has been observed that when people get together in group situations to make decisions, they tend to be far less cautious than they would be if they are alone. Extensive investigations of such phenomena indicate that group members become even more extreme in the same direction as their initial pregroup responses.

Baron and Byrne (1977) illustrated the group polarization effects in the following diagram.



Deindividuation

It is often observed that groups are releasers of antisocial actions and that individuals who are otherwise sober often indulge in such acts while in a group. Zimbardo's (1970) theory of deindividuation, illustrated in the following figure, provides an explanation for the wild and impulsive behaviour of individuals in groups.



Brainstorming

The mutual stimulation groups afford has been found to facilitate individuals thinking, as in brainstorming. When criticism is ruled out and freewheeling is welcomed, individuals have been found to provide more creative solutions to problems than when they are alone (Taylor, Berry and Block, 1958 Zuckerman and Horn, 1973)

Leadership

Leaders are often responsible for creating the group atmosphere. As the teacher is a natural leader in the classroom, it is his responsibility

to facilitate and promote group processes for optimal learning. In the classrooms of colleges and universities where late adolescents and early adults are found, a democratic style of leadership is more productive for teaching and more conducive to learning.

The teacher must be aware of the differential effects of the groups on individual behaviour. Group situation induce feelings of competition which have a bearing on students' interpersonal relationships in the class. Group pressures sometimes lower productivity and reduce freedom of action. It has been observed that highly motivated students may work better alone than in the group.

The interactions among students often lead to the formation of 'Cliques' in which three or four students form a sub-group and stick together because of their common interests. It is generally helpful to the teacher to be aware of the leaders and opinion influencers in the class who play an important role in group decisions and actions owing to their following among fellow students. The teacher as a leader must attempt to mobilize the group dynamics for constructive educational pursuits in the classroom.

Classroom dynamics

In order to understand classroom behaviours one must be aware of the relevance of the emotional needs of the teacher and the pupils to teaching and learning. The classroom is an arena for important interpersonal encounters and relationships that influence the educational pursuits. As Lowman (1987) points out in classroom interactions college teachers and students use various strategies to maximize positive and minimize negative feelings about themselves. Both teachers and students, though they differ in their role and power in the classroom structure, seek to satisfy their basic needs for affection and control. According to Lowman, the ways in which the teachers and students meet their needs in the classroom are predictable, and the interpersonal phenomena they produce in the classroom have a bearing on the motivation of the students to master their task.

The attitudes of students towards their studies and teachers often reflect in their classroom behaviours. It is equally true that the attitudes and expectations of the teachers influence the students in the class. Researches have indicated that personal attitude tend to produce reciprocal attitudes in others.

Teachers should learn to make use of the psychology of students

in creating a friendly atmosphere in the classroom. In colleges and universities the students seem to be generally satisfied with those teachers who are serious about sharing their knowledge, insights and interpretations, and who encourage the students to respond in a similar fashion.

The teacher-student relationships and interpersonal interactions among the students provide an atmosphere in the classroom for teaching and learning. It is the responsibility of the teacher within the given conditions to create a classroom that is conducive for teaching and learning.

Anticipatory and Participatory Learning

ULRICH PETER RITTER

Introduction

In this paper, I am going to discuss about two terms; anticipatory and participatory or, as some people say, anticipatory and participative learning with the intention to explore what these terms could mean in a university setting in general and what they could mean in my setting and mean in yours.

This is very necessary, because we do not have, as yet, a profound theoretical founding for a large repertoire of methods and models of learning situations for anticipatory and participatory learning. This is not to say that when the Club of Rome coined these terms, it created something completely new. The people, who wrote the Learning Report¹, used ideas of pedagogical philosophy which go back to Pestalozzi, Rudolf Steiner, John Dewey and Paolo Freire, to name just a few.

But before I comment further on this Report, let me explain briefly to you what the Club of Rome is and what this Report is about.

The Club of Rome is a loose organization of about a hundred top people from politics, management, trade unions, the sciences (both natural and social), engineering, philosophy, mathematics and education founded by the economist and former Fiat president Aurelio Pecci. Its members come from East and West, from capitalist and socialist countries and from North and South, i.e. from industrialized as well as from developing countries. Their common basis is their

worry about the future of mankind and their interest in studying alternative solutions to the present and future of our global society.

The Club arranged for a considerable number of studies to be undertaken, it discussed these studies and saw to it that they were presented to and widely discussed by the public.

The first of these studies², done at the Massachussets Institute of Technology by Meadows and others and financed by the German VW Foundation, called "Limits to Growth", gained worldwide attention. It is still the most controversial and best known study of the Club. Other reports followed. One that you may also have heard of is the so-called "Tinbergen" or "RIO-Report"³, dealing with the reshaping of the international economic order. This year's report (1983) by the way, is on the microchip revolution⁴ and thus is also discussing a theme of worldwide implications and repercussions.

Between these two Reports falls the Learning Report—or—as the title of the English publication goes: "No Limits to Learning: Bridging the Human Gap"⁵. It was prepared by a large group of people. The annexe lists more than 130 people taking part in the discussions and three teams of nine people each involved directly in the preparations headed by James W. Botkin, a Harvard educationist, Mahli Elmandjra, a professor of the University of Morocco in Rabat and Mircea Malitza, a Roumanian professor of mathematics and former Minister of Education.

The central themes of this report are

1. There is a widening gap between the global problems and the technical potential on the one hand and the ability of our social and political institutions to cope with these problems, i.e. to make use of our technical and scientific potential and to provide adequate solutions.
2. In fostering traditional learning, our educational systems are not helping at all to bridge this gap.
3. New forms of learning have to be found to enable us to make better use of the human potential to learn and to solve problems.
4. To achieve this goal, a new form of learning has to be developed and promoted at all levels of educational systems, which is both participatory and anticipatory in nature.

As I said, these concepts of anticipatory and participatory learning

are not so new in themselves.

What the Club of Rome did was not to invent a new form of learning, but to forcefully state the necessity of making this a mandatory form of learning, not only for a happy few who go to an experimental school or college or happen to encounter a progressive professor, but rather to make it a general form of learning at all levels of education. It also stresses the fact that it is not enough to foster participatory or anticipatory forms of learning. Rather, to be innovative, learning has to be anticipatory and participatory at the same time.

What the Club of Rome did not do was to provide us with clear definitions and practical recipes and proposals on how to teach in such a way as to make innovative learning possible. Quite on the contrary. The task of exploring what anticipatory and participatory learning may mean in different countries and cultures and in different educational settings was left deliberately open by the authors of the Report.

So what I can only do in this paper is to explore these concepts on the basis of my cultural and personal background and in my disciplinary and institutional setting, which is a conservative but open-minded Faculty of Economics at a large-city University in Germany. I hope to learn in the discussion what meaning my ideas have for you, what your ideas are on these concepts and if and how they can be implemented in your setting.

To prepare this discussion, to which I am looking forward to very much, I shall first explain briefly the critique of present educational systems as it is presented in the Report on Human Learning. I shall then talk about the levels of human learning. Finally, I will mention some techniques and learning situations for anticipatory and participatory learning. If and when you are interested, I will explain to you in a second lecture what I have done in my classes to foster anticipatory and participatory learning. What I do not want to do in my lecture is to try to sell anticipatory and participatory learning to you in any way or to suggest to you that you should change your teaching in a certain way. This is purely an informative lecture and only teaching in a certain way. This is purely an informative lecture and only you can decide if anything in it is relevant for your teaching.

Maintenance learning—A critique of educational system

The Learning Report severely criticises existing educational systems in two respects. In the first place, it says that educational systems lack

relevance to future needs because they aim at the learning of traditional opinions, values, methods and roles which are useful for measuring situations, which are well-known, which tend to repeat themselves and which are well-defined. This kind of "maintenance learning" was, is and will be important for the functioning and for the survival of social systems. However, it is no longer sufficient for this survival. Much of teaching and learning is irrelevant for the future. On the other hand, little or no attention is paid to future needs. The hypothesis that to master the future we should learn from the past is false to a much larger extent than ever before in view of the dramatic changes with which we are confronted.

The second point of critique is the lack of innovative learning provided by these systems. Innovative learning is defined by the Report as learning to bring about constructive change, renewal and problem formulation. Admittedly the Report says, educational systems never before had this task. Learning on the level of a civilization, a culture or even mankind was never brought about purposefully but rather happened. Learning to adapt to changes used to occur when some shock or catastrophe or the threat of a major upheaval brought about change.

However, according to the Club, today, we may no longer rely on this type of learning through shock. Rather, we must try to provide a type of learning, which will help to prevent such shocks from happening since the next shock might very well prove to be fatal to humanity. Already, now, we can see the possibility for such fatal shocks in the fields of ecology, technology, warfare and health without any steps being taken to bring about a type of learning which will help us to deal with these problems and thus become what the Report calls "Relevant learning", i.e. learning which helps to prepare people for tasks, which they will have to master in the future.

Levels of Learning—a new way of looking at teaching and learning

Thus, the Club of Rome has quite a different perspective when looking at educational systems and on teaching and learning than the average teacher, student, administrator or politician. This idea shall be explained further by introducing the concept "level of learning".

When we think about learning, we are accustomed to think about individuals and when we talk about teaching it is always individuals who are being taught, even when there are several individuals assembled

in a class or some other forms of gathering.

However, aside from the learning taking place at the individual level, there are other levels at which learning occurs, and there is something peculiar to the learning at each of these levels that we know very little of.

The next level moving upwards from the individual level is the group level. Of course, when groups learn, it is always also individuals who learn. However, this learning is quite different from the individual learning and you cannot teach group learning just by teaching the individuals separately. For example, team work cannot be learned alone or in a day. Group learning has to take place in the group and may be it is something different that each individual learns which makes group learning possible. The coordination of group resources and learning to produce ideas and schemes as a group can only be learning in a group itself. This is not to say, that at the individual level nothing can be learnt which would be helpful for the understanding of the behaviour in groups. It just means that this individual learning must be complemented by something additional, which can only be learnt at the group level.

The third level is the *level of organization and institutions*. Much that has been said of group learning can be said of the learning of organizations and institutions. This type of learning, of course, is the learning which organization development is about and it has been proven by many studies 'that management training and the training of individuals is not an efficient way to produce changes in organizations and institutions. Rather the kind of learning which is necessary here involves all or most of the members of the relevant part of the institution or organization and has to take place at least in part within the institution itself.

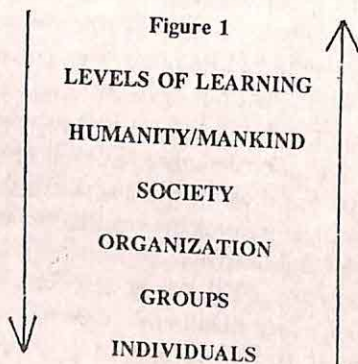
For instance, if a firm decides it is necessary to introduce new production methods, organizational schemes or worker co-determination, then it is not enough to give special training to managers. A learning process has to be initiated which involved employees at all levels. If firms do not learn they get broke. If a government institution does not learn, it might grow corrupted, become an anachronism or be unable to do its job.

Societal learning deals with the type of learning, which occurs when all or parts of a society are confronted with a problem, a dilemma or a new situation and look for ways and means to deal with this situation. Thus, during and after World War II, people with many

different shortages and grave problems of survival learnt to deal. At present, not enough or even destructive societal learning is taking place in Germany. One example is dealing with foreign workers (Auslander raus), another is the social acceptance of unemployment. On the other hand, predominantly acceptable societal learning is taking place in the peace movement and in the civic groups. The latter have developed successful strategies to get public attention and to provide counter-balances for a type of technocratic planning, which takes place over the heads of those affected by it.

Then we have the fifth level, which is the level humanity and of civilizations, and it is this fifth level which is of particular concern to the Club of Rome.

These five levels are not independent of each other, as the arrows in Figure 1 indicate. Learning which takes place at the level of humanity, of societies and of organizations obviously influences learning at the group and at the individual level. On the other hand, learning happening at the level of the individual, the group and organization influences the kind of learning happening at the level of society and civilization. This second arrow moving upwards is the one educators should worry about today.



What the Club of Rome says is that, if we have a new and different type of learning at the levels of the individuals, the group and the organization, then we can have a new type of learning at the societal and humanity level. This should help us to prevent shock by producing adequate learning at the level of civilization.

In recent years, we have developed many techniques to facilitate learning at the level of groups and institutions. At the same time,

a body of theory and research is being developed on which this process can build and grow. We lack this as far as society and humanity learning is concerned. On the other hand, they become more and more important and, as teachers, we must find out whether we have a role in fostering or preventing innovative learning at the levels of society and humanity.

The study of the Club of Rome says that for this type of learning to come about, people have to learn to own the future and participate actively in shaping it. And here, then, a new element of the role of designing learning situations is implied. In the language of the Report, it is called "anticipative and participative" learning and learning situations should be structured in such a way that this kind of learning can result from them.

The Concept of anticipatory and participatory learning

I would like to define anticipatory learning on two levels:

1. the level of content and method, and
2. the level of ways of thinking, of behaviour and attitude

On the level of content, anticipatory learning implies that instead of, or rather, in addition to, subject matter pertaining to past developments, the focus should be on present issues, problems and trends and analysis should focus on the implications for the future. As far as methods are concerned, the techniques used by futurists such as scenario, delphi, simulation, forecasting and modelling and the more refined methods of planning should become part of teaching and learning, helping students to become familiar with and conscious of the implications of present decisions and actions for alternative futures.

As to ways of thinking and reasoning, anticipatory learning means thinking in processes rather than in states, in systems rather than in simple laws of cause and effect, in ecological ethics rather than in maximizing individual benefit. And as far as the goals of anticipatory learning are concerned they comprise sets of objectives relating to the ability to work in teams and co-operate on an interdisciplinary basis as well as such goals as

- to recognize the societal and ecological consequences of activities of the specialist
- to reflect and discuss values and decisions in changing conditions
- to help to innovate rather than to resist change
- to be able to participate in planning processes.

Learning in this manner would then prepare people in such a way that they would be able to adapt to and promote change so as to prevent shock. This, however is only possible, the Club of Rome says, if anticipatory learning is accompanied by participatory learning, because only when people participate actively in the changes necessary will they support the measure which will necessarily have to be taken.

By *participatory learning*, I mean the participation of students in the decisions concerning the teaching-learning situation. The decisions referred to here concern the micro level in which most of the teaching and learning takes place, i.e. classroom situation. In this context students participate as individuals and as members.

In participatory learning decision making is not so much a question of vote-taking and exertion of influence but rather part of the learning process and of group development. The outcome of decision processes depends, therefore, more on the learning histories and personalities of group members and their relation to the learning task than on political convictions and values. Decisions are arrived at generally by consensus or compromise. Many reasons have been stated for reaching such participation, let me mention few which were discussed at a conference in Klagenfurt.⁷

At least two different viewpoints can be distinguished: the view from the students' and the view from the teachers' side of the teaching-learning process. For the students, participation implies the possibility of escaping from a learning situation in which they find themselves alienated from the goals and contents of their studies. While in the 1960s and early 70s, many students looked for discussions and disputes in their courses, career reasons, grades, and diplomas are the main reasons for studying now, personal growth and fulfilment is looked for outside the courses. Students are not propelled by interest in gaining knowledge but rather by the desire to get the grades and certificates necessary for other purposes such as gaining a scholarship or getting a job. The content of courses is seen as irrelevant. Students who favour or look for participation see it as a medium for gaining more meaningful and relevant learning experiences and some also hope to thus set pattern for the society as a whole. On the other side, professors find themselves confronted with students who show little interest in subject matter and all the more interest in grades, examinations and learning requirements. Teaching and university lose in their eyes everything they used to stand for. Achievement without motivation seems to be motto of the teaching factory in which diplomated students

become the measurable output.

Professors view student participation as a means for increasing student motivation and for providing students with learning situations in which meaningful, significant learning can take place again.

A new line of argument was brought into the discussion by some participants from Mexico: student participation as a means to bring the problems of the community into the university and enable the university to provide more useful learning to students and the people. In many Latin American countries, universities are places where students are immersed in Western science and civilization, often in complete negligence of the culture and the needs of these countries. Universities thus help to alienate the intellectuals from the country (and particularly the countryside) and to foster urbanization, making it difficult for the governments to fill posts with qualified academicians outside the big cities. Through student participation, it is hoped that the content of studies will be changed so that what is studied becomes more relevant to the student and the community which he comes from and hopefully returns to.

A fourth line of argument sees the students as potential participants in community projects not only after but also during their studies, thus integrating them into the community with its problems and needs. Thus, the University should become a part of the local culture and not the ambassador of the culture of the big city alienating its students from their surroundings. This should reverse the destructive influence schools and universities have had in the more distant parts of a country as was the case in Mexico and Northern Norway.

NOTES

1. Botkin, James A.O., *No limits to learning: Bridging the Human Gap*, Oxford 1979 (Pergamon Press).
2. Meadows, Donella A.O., *The Limits to Growth, A Report for the Club of Rome's Project on the Predicament of Mankind*, New York, 1972.
3. Tinbergen, Jan (ed.), *Reshaping the International Order*, Amsterdam, 1976.
4. Friedrichs, Gunter & Schaff, Adam (eds), *For Better or For Worse*, Vienna 1982
5. See above 1
6. Fred Fiedler, *Führungstraining, Psychologie heute*, U 6, 1979 pp 34: various publications in English.
7. Third International Congress of the European Association for Research and Development in Higher Education, January 2-6, 1979 in the Klagenfurt University, (Australia)

**STRATEGIES OF TEACHING IN
HIGHER EDUCATION**

Methods of Teaching in Post Secondary Education

DONALD A. BLIGH
DAVID JAQUES AND DAVID WARREN PIPER

Methods of presenting information

The Lecture Method: After a small-scale but worldwide survey, Bligh* concluded that lectures are still the most widely used teaching method in university education. A decision to use this method rather than another begs the question what are the relative advantages and disadvantages of lecture method compared with others? In an earlier publication Bligh argued that 'Lectures are as effective as other methods for teaching information, but not more so'. Figure 1 shows that when using this criterion lectures are similar in effectiveness to reading and discussion. Since they are more effective than no teaching at all, it cannot be claimed that this is because they are all equally useless. Consequently the lecture has a place. Figures 2 and 3 show that, when compared with discussion methods, lectures are relatively ineffective at teaching students to think and to change their attitudes in some way. Bligh, therefore, concluded that lectures should not normally be used for these objectives. Using a similar method of tabulating research results, he concluded that lectures are less popular with students than discussion methods and 'personal and social

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* The author references to this paper can be found from the bibliography given at the end of the book.

adjustment should not normally be the major objective of lectures'. The explanation for this was that lectures involve a relatively passive form of learning, while objective involving internal mental processes require greater activity. The receipt of information involves perception of external events. In this document we have argued that teaching students to think is the major objective of higher education. It, therefore, follows that, contrary to common practice, lectures should have a subordinate place to discussion methods in higher education.

It is sometimes said that the lecture method has been inappropriate since the invention of the printing press—all students can read and printed materials are widely available. This is simply not true. Approximately one-third of the world's adult population is still illiterate and many countries are critically short of educational reading matter, particularly in rural areas. Even in countries well-equipped with photocopying and other reprographic equipment the rapid expansion of student numbers ensures that resources are never adequate. Furthermore, lectures are one of the most economic methods of teaching information, particularly when the material needs to be adapted to the requirements of large audiences in specific areas. This is particularly true of agricultural education. For example, in Asia there are large rural populations with basically agricultural economies producing little surplus on which to expand their education system. Yet they wish to expand their trained manpower upon a very small educational base within a generation. In these conditions, the lecture method has an important role because it is cheap, adaptable and relevant. Imported educational programmes are inappropriate when the agricultural, industrial, economic, medical, legal and social problems of each area are highly specific.

Yet even when confined to information objectives, the lecture method has serious limitations. Jones and Bassey have shown that students' memories of what is said in lectures fades rapidly if there is no rehearsal of the information as soon as possible after its presentation. Furthermore, observations of students' lecture notes show that their perception of what is said is normally inaccurate, their selection is partial and their judgement of what is important is immature. The form of a lecture is necessarily sequential but the ideas to be conveyed usually require multidimensional relationships, consequently upon the temporal form of a lecture imposes serious constraints upon students' learning. A fourth limitation results from the one-way communication of most lectures. Many lecturers do not

Figure 1

Comparisons of lectures and other methods using knowledge of information at the criterion.

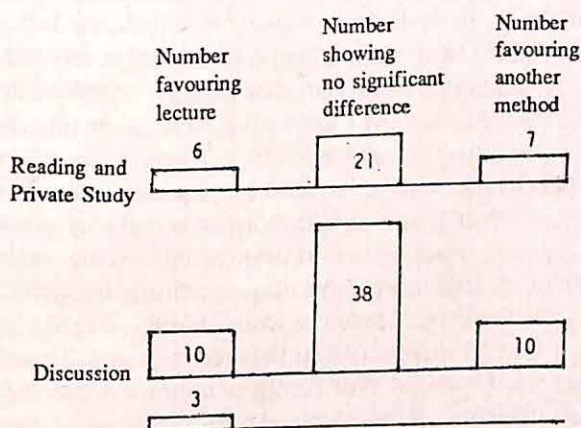


Figure 2

Comparisons of lectures and discussion methods using tests of thinking as the criterion.

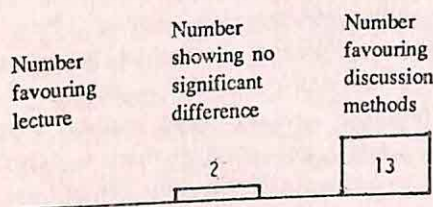
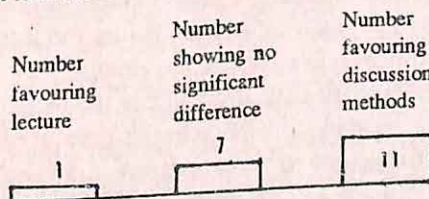


Figure 3

Comparisons of lectures and discussion methods using attitudes as the criterion.



welcome interruptions and questions and few have received training in how to perceive students' reactions. For example, Guyot has shown that there is a relationship between the positions occupied by students in a lecture theatre and their feelings towards the lecturer and their fellow students. If lecturers are prepared to ask questions, they can obtain some information on their effectiveness. Feedback lecture theatres in which students may press an appropriate button according to their response to a multiple-choice questions are possessed by a few institutions in North America and Europe, but their use is rare. By providing cubes with differently coloured sides, Taplin has been able to obtain the same feedback more cheaply by requiring students to show an appropriate colour according to their multiple choice response.

A particularly serious limitation of the lecture methods is the decline in students' attention. Llyod observed that the proportion of information units noted by students during a lecture declined steadily after the first five minutes until just before the end of the lecture period. Thomas came to a similar conclusion from the results of multiple-choice tests on the information delivered. Bligh obtained precisely the same graph from measures of students' heart rates during lectures but not when a variety of methods was used. However, he was unable to vindicate these findings when using Truth-Functional tests of students' learning and thinking at eight cognitive levels.

Various attempts have been made to overcome these limitations. Betts and Walton attempted to maintain attention by providing varied stimulation when one delivered the formal theoretical aspects of a subject while the other interjected critical and humorous comments. The resulting 'dialogue lecture' gave well-organized theoretical information in one voice, but altered students to debatable questions with another. Bligh has recommended the use of buzzgroups, horse-shoe groups and other discussion techniques for very short periods in lecture classes. McCarthy has used the 'step-by-step' lecture method in which students are first asked to answer and possibly discuss their responses to a multiple-choice question, before the lecturer gives his account of the subject. After five or ten minutes, the teacher may present another multi-choice question so that the lecture proceeds in a series of steps; each student is made to think about each section of the material before listening to the lecturer. A more common method is to use handouts to ensure that students at least go away with the most important ideas written down. Bligh suggested a variety of ways in which handouts may be used including the use of heading with wide

spaces on which students may make their own notes because Howe has shown that students remember information that they have noted better than that they have not. Hartley has found that students note more when the spaces are greater but the differences in learning were insignificant. McDougall found that students given handouts before lectures performed significantly better on immediate post-tests than students given handouts immediately afterwards. There was no difference seven weeks later. There could be many reasons for this such as compensatory study or some other levelling activity, but the results of Freyber's experiment suggest that no significant differences were obtained because the students forgot what they had learned, while the possession of a handout was a positive advantage when students were allowed the opportunity to revise before test.

Any one who has been a student in post-secondary education knows that there is a wide variation in standards of lecturing. This is largely because lecturers are given no formal training and consequently some never overcome their initial difficulties while others learn from experience. The difficulties of new lecturers are, therefore, worth attention. During preparation, many are over-anxious about their lecture content and the inadequacy of their own knowledge. This results in a failure to consider their lecturing technique taking too much time by over-preparation of detail and teaching at a level far above the ability of the students. These problems are frequently exacerbated by crammed syllabus, the failure to present the organization of their material clearly and the preparation of notes in handwriting too small to read without losing sight of their audience. Upon reaching the lecture theatre, their natural initial nervousness results in mannerisms, such as failure to look at the audience and speaking too fast, which become ingrained in their lecture style. Techniques of voice production also become habitual early in a lecturer's career. There are techniques for dealing with large and mixed ability audiences but these too need to be learned.

This point leads to an important conclusion. The intrinsic limitations of the lecture method can be overcome by a carefully developed teaching technique, but this need to be learned; it cannot be left to chance. Heads of Colleges should take their responsibilities seriously by providing some training and assistance for their new teachers. *Private Study* is the second traditional method for student learning. In what is written here, it will be assumed that this consists of reading, the other activities are so varied that detailed research on them is

virtually unavailable.

British research suggests that on the average student work a 36-39 hour week, partly in class and partly in private study. Obviously, there are wide individual differences. These vary with the subject of study whether they expect examinations the following May and their place of residence. In the Netherlands, Muggen found correlations of 0.35 to 0.66 between student achievement and the time spent in private study. In the Australian study by Clift and Thomas, students in arts subjects spent between 46 to 51 hours per week on academic work in their first three years but only 36 hours in their fourth year. When comparing these hours with those for most workers, it should always be remembered that students spend a high proportion of their working life near the limits of their abilities. Their abilities learning style, time and effort need to be clearly distinguished.

From these figures it will be possible for governments to calculate the number of hours spent by students in private study in their countries. Even if students never do any work during the vacations and completely fail to transfer any of their study skills to their later working life, a mere increase of 1 per cent in their efficiency would justify a considerable investment in research and training in study methods. By any standards students private study is a major industry, but it receives little public support in most countries.

This raises three questions. What benefits may be expected from teaching students how to study? What should be the content of this teaching? And who should teach it? The answers to these questions are strongly interrelated.

Students could benefit from learning how to use library resources. In one study by Durey, 43 per cent students looking for books were unable to find them even with the help of a catalogue. Seventeen per cent did not know the author or title of the books they required. In another study, 28 per cent of physicists and chemists experienced serious delays in their research owing to their ignorance of earlier work. Wood has reported that scientists and engineers working in industry and universities made poor use of libraries and inadequate use of indexes, abstracts and other sources of information essential to their work. From interviews with nearly 700 postgraduates research students, Rudd reported that 63 per cent of students in social studies and 38 per cent in arts received no advice in research techniques. Still typically spent less than one hour per week with their students who were more lonely than undergraduates.

One of the most important characteristics of efficient study methods appears to be the students sense of responsibility. Pond has shown that successful students were less likely to neglect their weaker subjects, attended to urgent tasks, were more regular in their study, did more preliminary reading, did more preparation for lectures and tutorials and had a better attendance record. Hammond also showed the importance of regular use of the library and attendance at classes. Informal discussion groups appear to decrease the probability of student dropout and improve their mean performance in examinations.

It is clear that students need to be taught how to use library resources, Robinson has advocated the SQ3R system of study in which the student is first advised to 'survey' a book by reading the preface, looking at the contents or skimming it rapidly. He should then write down 'Questions' to give direction to his thoughts. Only then should he attempt to 'Read' the book. He should then 'Recite' what he has learned, and finally 'Revise' by looking through his notes or the book itself. Carmichael and Dearborn found that students will concentrate for up to six hours if they answered questions on the material they were reading every twenty-five minutes, compared with one and a half hours without questions.

A great amount of work has been conducted on the speeds of 'students' reading. Yoakam has distinguished four reading speeds; 'skimming' 'rapid reading', 'normal' and 'careful'. Some of the research has concentrated upon eye movements and there is some agreement that the speed of reading is related to the width of eye span, the regularity of eye movements, the number and length of fixations and the elimination of the tendency to read the same material more than once. Poulton has suggested that the problem for most students is that their comprehension is always more rapid than their reading. This seems surprising because students sometimes do not seem to comprehend at all! After reviewing available research, he concluded that the average reading speed for serious material was 160-240 words per minute before training and between 340 and 500 words per minute afterwards. Since these improvements ranged from 40 to 130 per cent with a mean of 85 per cent interacting with an average improvement in comprehension of 10 per cent, the average gain in efficiency is just over 100 per cent. However, the improvements may have been temporary; Fry, but even on delayed tests improvements (of 25 to 40 per cent) appear to be greater for students than for older people.

The difficulty in providing courses for students on study methods is that the same methods are not suitable for all students, and even if they were, it would not follow that the same advice is required because different students have different styles and vices when studying. Hudson and Parlett have described as 'syllabus bound' students who tended to agree that 'Without the stimulus of exams I doubt whether I would do much studying', 'I prefer not to be left to work in my own way as I get nothing done', 'If I think about the amount that has to be learned and thought about in my course work, I sometimes get harassed and anxious', 'If it was going to graduate school, it would not be because I was really excited about finding things out'. Students described as 'syllabus-free' were likely to agree that; 'I do not like to be closely supervised in my work', 'I spent too long on certain topics because I get very involved in them, 'I frequently think of experiments for investigations 'I would like to tackle', 'I like to play around with ideas of my own even if they do not come to much' and 'Often I try to think of a better way of doing something than is described in a lecture or a book', Hudson and Parlett thought these students were of contrasting types on the same scale, but Entwistle has concluded that these are two different dimensions and students may score high or low on both. He identified four groups of students according to their attitude to work. The 'disorganized and dilatory' agreed that they were slow at getting down to work in the evening, tended to put off work and to hand it in late, were not good at organizing their study time and did poorly in examinations. The 'cynical and disenchanted' sometimes wished they had gone straight into work after leaving school, could not see the relevance of their work and did not think textbooks worth buying. A third group displayed syllabus freedom, conscientiousness but fear of failure. They worried about examinations and work they should have submitted, they regarded their friends as more competent than they and they preferred to listen in tutorials and discussion groups rather than take an active part. The last group displayed 'ruthless efficiency and masculine competitiveness'. They were 'syllabus bound' and determined to play the academic game to win. Although students in the last two groups tended to do better than the others, they required contrasting advice. Advice is less appropriate for the first two groups because their problems are motivational; preaching is ineffective; they need to establish their own goals.

It will be argued here that it is the teacher's responsibility to teach

students how to study their particular subject partly because the best methods differ in different subjects and partly because it is part of teaching. Because one function of post-secondary education is to teach students to continue to learn in later life, it should be a training in independent learning. Consequently it is part of a teacher's job to create conditions in which students can learn study techniques. Yet Reid found that 60 per cent of the teachers in one university thought that undergraduates should be mature enough to work with only general guidance. But students cannot be expected to change their study habits suddenly upon arrival at university from those to which they were accustomed at school. It is part of the teacher's skill to make this transition more gentle. Much can be achieved if teachers are only sensitive to the problem. In a study by Child, 75 per cent of the students surveyed reported that their relationship with their teachers was an important factor affecting their attitude to their subject and their method of study. In an Australian investigation by Clift and Thomas, science students complained that too much information was covered in lectures, that it was frequently too difficult and that too little time was devoted to small group teaching. Although they had ample time to follow up classroom teaching, they did not know how to use it.

There are a number of investigations that show the contrasting requirements of students in different subjects. For example, Entwistle found that arts and social science students spent more time reading recommended books and background material, making notes from books, preparing for tutorials and writing essays, than students of the physical sciences who spent most of their time writing up practicals. He included that arts and science students have a totally different experience of higher education. Consequently, the same advice cannot be appropriate for both. In another survey, the proportion of students receiving lists of recommended references varied from 80 per cent in Law to 5 per cent Engineering with 67 per cent in Arts, 64 per cent in Social Science, 29 per cent in Medicine and 24 per cent in pure science. Virtually all students in the physical sciences were studying courses in which no reading lists were given. These percentages also reflected the pattern of borrowing from the library, but students in Medicine and Law spent more on books than students of other subjects. Malleon has shown that different study methods are required within a given subject. This was particularly true in Medicine where there were strong contrasts between clinical and pre-clinical courses. There is good reason to believe that study difficulties are a component factor

in nearly all causes of student dropout and that the wastage rate can be halved if teachers provide some help to students to overcome them. Consequently it is doubtful whether any college or any government can afford to neglect investment in students study method.

Visual-aids as techniques of teaching—the traditional methods of teaching and learning, lectures and private study, placed a heavy emphasis upon verbal abilities so that educational systems became highly selective in terms of these mental processes. During the Second World War, many nations found it necessary to train large numbers of people very quickly in new techniques and it was immediately thought that visual teaching methods would need to be used. After the war many military personnel entered post-secondary educational institutions with enthusiasm for these methods. Indeed their influence sometimes resulted in a naive association between visual-aids, educational technology and 'good' teaching.

Perhaps it was because of these events M.D.Vernon and others began to investigate the effectiveness of visual-aids during the post-war period. She concluded that *a verbal accompaniment to visual presentations is more important than visual illustration of verbal presentations*. In one experiment, she found that the ability of adults to understand and remember statistical data presented graphically depended on the ability to interpret graphic conventions, to generalize from particular instances and to think relevantly, and on verbal ability. A similar conclusion was drawn from experiments with secondary school pupils. It seems as if many people have difficulty in accommodating visual information to information they already possess. In another experiment she found that a purely verbal description presented to 16 to 18 year old girls was not remembered very well when supplemented by visual material. In 1952, her conclusion was almost the exact opposite to that assumed ten years earlier in military circles; comparatively intelligent and well educated people can derive some information from graphs and charts presented without a written text; but with less intelligent, less educated and immature individuals, or with complex data, understanding may be rather poor. The work of Hall and Laner reinforced the view that visual-aids contain a language of their own which also has to be learned. Once learned, it may be very effective for certain concepts.

However, later work has shown that these conclusions may be oversimplifications. In a long series of experiments, Dwyer has shown that different kinds of objective are best achieved by different kinds of

visual-aid. For example, simple line diagrams are most effective if student are required to redraw a diagram; but if only recognition is required, shaded colour drawings are more effective, photographs, or other methods of increasing realism, were only more effective when realism was required in the tests. A further warning against oversimplification in the judgement of visual-aids comes from Lander and Sell who showed that subjective judgements of visual aids bore little relationship to their effectiveness as judged by workers' industrial behaviour.

There are many publications detailing the relative advantages of different kinds of visual-aid. Consequently no great detail will be given here. For example, the traditional blackboard has few advantages over the overhead projector, yet in some countries the latter is virtually unknown. It has been known for a long time that perception of black figures on a white background is easier, quicker and more accurate than perception of white on a black background. This is important in those subjects in which students are required to copy a great deal from the board or screen. Overhead projectors have the further advantages that large areas of blackboard are not required, they permit repeatable build-up of complex diagrams, they are cleaner, and teachers who are poor artists may prepare their diagrams in advance.

The difficulty with visual-aids prepared by persons other than the teacher is that they do not adapt readily to his particular teaching style. Peters and Scheffer have shown that for this reason teachers are frequently less effective when they use the prepared notes that frequently accompany film-strips. They also reported all kinds of administrative difficulties with the use of visual-aids. Films often arrived late; distributions gave inadequate or inaccurate information; they could not be suitably used in many building; inevitable room changes caused confusion; and most teachers could not operate the projection equipment competently.

The use of coloured slides is increasingly popular. In one study by Elwood and Haley, students of microanatomy performed better with set of slides and written guides than with lectures, unstructured laboratory sessions and laboratory exercises. In a study by Gordon and Morgan, the success of coloured slides was almost an embarrassment because students preferred them to using the microscopes.

A large amount of research has been conducted into the use of colour, eye movements, styles of lettering, light intensities, viewing

angles, methods of layout and the amount of information presented. These factors may be important for artist specializing in educational graphics, but it is doubtful whether their cost benefit justifies the time they would require for teachers to implement.

We may observe in conclusion that the post-war over-enthusiasm for visual-aids has led to a backlash scepticism against any innovation, and educationists in general, among many post-secondary teachers. We have seen that the benefits depend upon choosing the right graphic form for each specific psychological objective. The benefit should also be weighed against the costs. Clearly the contracting financial resources of different countries may lead to varied policies in the use of visual-aids.

The Rise and Fall of Programmed Learning

In the same way that there was a surge of interest in static visual-aids, so the enthusiasm for programmed learning grew to a peak from 1958 to the early 1960s and has since declined. Its importance lies in the residue of principles that remains.

The pattern of growth and decline may be illustrated with reference to Africa. In the early 1960s, the United Nations Special Fund sponsored programmed learning in Central Africa, but since the major source of programmes was in Rhodesia, the development of programmes was in Rhodesia, the development of programmes in the civil service, railways, mining, armed services schools and other educational institutions came to an abrupt halt upon Rhodesia's Unilateral Declaration of Independence. The University of Botswana, Lesotho and Swaziland introduced the well known programme by Holland and Skinner. The Universities of Zambia, Malawi and Amahdu Bello in Nigeria adapted programmes in mathematics, chemistry and genetics, and experimental physics, but enthusiasm was dampened by difficulties. Many of the programmes were important; they used cultural references inappropriate in Africa, required fine distinctions of meaning particularly difficult for students learning in a foreign or second language and some required machines which were unavailable.

Virtually all the major principles of programmed learning have some empirical support with school children and some contraindications with adults. For example, it is an important principle that students are motivated by success, and programmes are usually designed so that 90 to 95 per cent of student response are correct. Kennedy and Willcutt

conducted eleven experiments of their own and reviewed a large number of others and concluded that praise improved performance while blame led to deterioration. Leith and Davis found the same thing with school children regardless of their personality. Yet in higher education students appear to demand greater challenge. MacDonald-Ross has suggested that programmed learning tends to deaden originality, creativity and critical thought, and that questions should be more open-ended so that there are no right answers for which students receive praise. Furthermore, Elley and Leith found no relationship between concept learning and the rate of success.

One of the objections to the lecture method is that students are forced to learn at a pace set by the teacher. Self-pacing in individual learning has been held to be more advantageous; but Hartley has reviewed a number of studies comparing individual learning with paced projection to a group using filmstrips or television, and most showed no difference. Moore has also found no difference between individual and group work. Stones and Gallegos have conducted experiments which suggest that most students can go a little faster than their inclination without learning any less.

There is reason to think that students who work in pairs perform slightly better than those who work either singly or in groups of three or more. There appears to be little difference between those who work singly and those who work in the nature of the discussion permitted by groups of different sizes. We should conclude that the principle of self-pacing requires some modification at the post-secondary level.

The principle that teaching should proceed in small steps also requires some modification with older students. At the school level there is ample evidence of its validity. With adults Gessner has shown that frequent testing often interferes with learning and that the students also may object to it. Furthermore, the ability of students in higher education often consists of their ability to relate different aspects of a topic, yet this mental process is interrupted by breaking up information into small units and the incessant need to answer questions.

The debate on whether programme, should be linear or branching rests upon a principle of individuality; but Senter *et. al* showed that only 6 per cent of the possible branches of Crowder's original programme were actually used, so the differences in teaching received by different students were not great. In some cases, Stones is correct in suggesting that there is little difference between linear and branching programmes because the latter are built around a linear path. Kaufman

concluded that the two methods were no difference in the amount of remedial material included. Biran and Biran and Pickering showed that if a branching programme was "unscrambled" and placed on a single page, students worked more quickly, were more favourable to the programme and it was no less effective. When explanations were substituted for the branches, there was no significant loss in learning. All this suggests that there is little advantage in branching programmes, the notion that they are necessary to provide individual students with remedial work for their particular difficulties appears to be largely unfounded.

Much of the acclaimed success of programmed learning is based upon experiments in which the criterion test is more closely related to the programme than to the alternative method of teaching. If this effect is minimized, possibly by using a delayed test, the advantage of programmed learning ceases to be significant.

This account of programmed learning may appear to be disparaging; its principles are shown to be important but not absolute. They should, therefore, be observed as guides, but they cannot fulfil the early hopes with which programmed learning was held.

Having shown that programmed learning requires modification for post-secondary education, it is not surprising to find attempts to modify it. The Keller Plan is a method that provides information in fairly large units, creates some pressure upon students to finish them within a specified time while allowing self-pacing within that time, gives some reinforcement and encouragement without incessant testing, is straightforwardly linear and allows for interpersonal contact.

In this method, sometimes called a Personalized System of Instruction (PSI), a year's work in a course is divided into units of about one week's work; students are assigned tasks which may include reading, visiting the library, using handouts, conducting experiments of fieldwork and anything else that might normally form part of a course; they are provided with questions and exercises as they proceed. When a student thinks he has completed a unit, he reports for a test to a "Proctor" usually a more senior student who has been chosen for his mastery of the subject, his willingness to help and his personal acceptability. These tests usually consist of about ten questions including one requiring a discursive answer. When completed, the proctor, who marks it in the presence of the student, may ask questions about his correct, as well as incorrect, answers. Students who do not reach a satisfactory standard are required to restudy the assigned

material and report again for a test some time later. A student may not proceed to the next unit until he has reached a satisfactory standard on the previous one. Attendance at lectures and demonstrations are an added bonus for those students who have completed a requisite number of units successfully. Thus lectures become a reward and privilege to attend, rather than a compulsory drudge. Performance in the unit commonly contributes a fixed proportion to the students' final grades. Students report that they receive more personal attention by this method because contact is more individual.

The method has become extremely popular in the United States. Although a very large number of investigations of its effectiveness have been conducted, very few have been well-controlled. Keller's own work suggest that PSI raises the level of performance of middle ability students but does little for the very best and for those who appear to have little ability. The Keller Plan seems to work particularly well in subjects requiring practical work, and since self-instructional methods are not usually easy to integrate with practical work, this is a valuable feature.

Contingency Contracting and Contingency Management: The Keller Plan is based upon four principles; as in programmed learning progress depends upon performance; lectures and demonstrations are used to control motivation; the administration of tests by senior students ensures some personal interaction during the course, including some tutoring with immediate knowledge of test performance; and teaching and assessment are made part of an integrated system so that students see the relevance of one to the other.

The first two principles are the essence of contingency management which is in effect, "If you do X, I will give you 'Y'. For example, at New College, University of Alabama, students opting for a contingency contracting course select their own 'advisory committee' which usually consists of a core tutor the student himself and two other people who may or may not be members of the university. The job of the committee is to design a course specifically for the particular student in consultation with him. To do this they may set out objectives, the methods of evaluation, the sequence and timing of the course, teaching methods, and how the course should be admitted. The course may include projects, interdisciplinary seminars, attendance at lectures and off campus work. The student has to complete the course as designed by the committee and he signs an agreement with them to do so. In

effect he signs a contract and if he does not satisfy it, he does not obtain his qualification at the end. In many cases the student is responsible for his own self-evaluation and this is possible because the objectives of the course are made explicit. Nevertheless, the contract designing committees reserves the right to review the contract from time to time and to administer traditional examinations as both a supplement and a check.

The principles of contingency management have been described by Lloyed and Homme *et al.* who say that the rewards should be immediate, frequent, small and given for achievement of objectives and not for anything else. Contracts need to be fair, clear, positive, honest and systematic. L.K. Miller has described a course in which students are given a long reading list and administered periodic tests for which a specified number of credits are available. Attendance at classes is only permitted on payment of credits earned from test performance. As a check on the system students were required to take a short test on contingency management and answer a test organized by seven students who themselves obtained credit for doing so. Evaluation of these courses suggests that there is a very wide range of reaction to them. Many students do very well, but for some the system is totally unsuitable. To generalize from particular students or courses is an advisable, but there is reason to think that older students and those scoring highly on tests of independence are more likely to stand the strain of contingency management and contingency contracting courses.

Audio-Tutorials and Multi-Media Methods: The Keller Plan and contingency techniques are based on the psychological principles enunciated by B.F. Skinner which led to the surge of interest in programmed learning in the early 1960s. The audio-tutorial method developed by Postlethwait at Purdue University also has a programmed component but is primarily derived from the development of visual-aids and the increasing availability of tape-recorders and other audio equipment during the 1950s.

In the audio-tutorial system, audio-tape presentations are available in carrels at a learning centre, supplemented with textbooks, a laboratory manual, specimens and experimental apparatus so that the experimental and theoretical aspects of science teaching are completely integrated. Films, lectures and demonstrations are also available and there are weekly question and answer and discussion periods. This

is a modified self-paced multi-media approach.

Postlethwait reports a general improvement in students' performance but it is doubtful whether this finding can be generalized since most innovations benefit from their novelty effects and the greater thoroughness with which teachers prepare their material.

The increasing complexity of educational planning resulting from the use of such multi-media methods has important implications. First, there will need to be increasing co-operation between institutions where expensive media are used. Secondly where this occurs there is an increasing likelihood of conformity in ideas and curriculum in academic circles. This may militate against creativity so that certain avenues of research are never noticed, let alone explored. The University of Lund and the University of Oslo have adopted the text of an audio-visual programme originally devised at Erasmus University, Rotterdam, but an attempt to preserve some originality has been made by the inclusion of some group discussions, clinical material supplied by each university requiring each student to keep a diary throughout the course, and the collection of criticisms and comments on the course by the editors of the basic text.

The development of 'tape-slide' presentations should increase markedly in the next ten years with the growth of world-wide marketing of basic courses. The method has all the advantages of self-instructional techniques so far considered and permits the careful relationships of visual and verbal instructions in a way that is not spontaneously possible in the classroom. Students may work at their own pace stopping and replaying the tapes as necessary. They may work at any time of day or night. Questions and other self-testing devices may be included and may provide feedback on performance. Modifications are quicker and easier than with printed material. Coloured slides can be extremely attractive and the tapes and slides are light so that they may easily be distributed by mail.

Although learning carrels with synchronized tape-slide presentations are not difficult to establish, there has been remarkably little research into the effectiveness of tape-slide presentations. Pullon and Miller found them slightly more effective than additional instruction in biological laboratories. Goodhue found that students worked up to three times as fast at a dissection task and Riech has found them to be extremely popular with students. Dr. Morley of the Institute of Child Health in London has developed a world-wide service in teaching of pediatrics by tape-slide methods at remarkably low cost. The

Engineering Department at the University of Exeter (United Kingdom) has used tape-slide teaching since its inception and is finding an increasing demand for its programmes from all over the world.

As with other self-instructional techniques this system should give more time to help small groups of individual students to learn to think. The important point is that teachers should optimize this opportunity and not use it as an occasion to increase the size of the syllabus, to conduct research, or to carry out their activities which do not achieve the major objectives of teaching.

Learning at a Distance: The development of audio and video recording systems is one of the factors leading to increased home study. Other factors include increasing literacy, the greater demand, by employers for written qualification, and much greater social mobility leading to a change in aspirations and values accorded to education. Governments are seeing radio and television as media capable of providing *education permanent*, higher education for all—and other social and economic ideals.

Correspondence Study: Before these developments the major method was and still is, correspondence study. The Hermods School in Sweden dates back to 1885, and provided virtually no teacher contact. Today high schools, industrial commercial training establishments and the State schools co-operate to provide teachers to explain difficult points, organize group work and recommend additional readings. The Soviet Union has several million students studying by correspondence, courses in industry and building, public education and economics being especially popular. In Sweden, one person in eight is engaged in some form of correspondence study. Since many of these students have families and professional obligations, they would be unlikely to attend regional universities if learning at a distance were not available.

Such courses are difficult to evaluate and organize. In so far as many students obtain externally moderated degrees, the standards appear to be very satisfactory. Yet, this is a restricted criterion of evaluation. The major role of these courses in society is social not academic. It is, therefore, doubtful whether they should be evaluated purely in terms of their academic success. The major difficulties in organization arise from the limited range or methods that can be used. Tutorials and discussions with other students are particularly difficult to arrange, yet we have seen that even in traditional full-time colleges, social factors are the most important influences on dropout. Face to face tuition is particularly important at the beginning of courses when

students first encounter the challenge. High schools are, at least in part, tertiary institutions, while the State schools are not : in some Scandinavian systems, the same institution provides an education at secondary and tertiary levels so that it cannot easily be classified as purely secondary or tertiary. Laboratory and other practical work is also difficult to arrange and this may restrict the range of subjects offered and limit the economic benefits to the nation.

One way to overcome these difficulties is to require attendance at a central college for a few weeks, but this removes the a la carte feature of correspondence courses in which students may enrol at any time of the year and proceed at their own pace. However experience in the German Democratic Republic suggests that the imposition of a time schedule enhances motivation and a sense of achievement and lowers the rate of drop-out.

Instruction by Radio: Radio has been used for many years in Australia, the United Kingdom, Japan, Mexico, Thailand, the United States and to some extent in Spain for primary and secondary education. At the postsecondary level, the Radio University of New South Wales in Australia began using short wave bands of the Flying Doctor Service in 1965 to teach students in the 'outback' regions. More recently, the British Open University has found radio more useful than television in many of its arts courses. The Funk Kolleg of Frankfurt in the Federal Republic of Germany conducted a survey of its students in 1966. Some 48 per cent were aged from 20 to 29 and 29 per cent from 30 to 39, 46 per cent were interested members of public; 31 per cent wanted to take University entrance examinations; and a good proportion were teachers wishing to broaden their outlook.

Teaching by radio has some of the same difficulties as correspondence study with the important addition that it is not self-pacing. Consequently the speed of presentation to an unseen audience is an important factor affecting both comprehension and attention. Schneider has shown that the span of attention increases with age from 15 minutes for 18 to 10 years olds to over 30 minutes for students over the age of 15. A similar gradation was found in the proportion of material that was remembered. There have been few studies comprising radio with live lectures with one exception, most investigations comparing live and taped lectures show no significant difference in effectiveness. With the exception of the study by Popham audio-tapes are less popular with students than live lectures. Whether the voice is that of a professional broadcaster appears to make no

difference, but Lavach has shown that the inclusion of arousing words aids long-term memory, but not short-term memory. In Sweden, Agar has used tape recording in the training of industrial workers. Since the presence of the instructors is not required recruitment could be staggered; older workers welcomed the opportunity to consult the tapes at any time without feeling embarrassed; and the time taken for training was halved.

The provision of lectures by telephone is not to be recommended, but at the university of Pennsylvania a lecturer's commitments elsewhere made this necessary. There 300 students were divided into ten classes, each with two loudspeakers and a student talk-back unit which had to be placed carefully for smooth running. To ensure, that students' attention was maintained, it was necessary to consider acoustic and temperature conditions carefully. Printed material including textbooks, tests, maps and a list of course objectives and evaluation sheets were provided. A 'classroom attendant', who may have been a graduate or a member of the academic staff, ensured that two-way telephone communication was maintained and supervised the organization of class. The lecturer himself visited the college every six weeks to answer questions.

One section of the Open University (United Kingdom) has experimented with a multiple telephone link-up for group discussions with about five students in each group. By saving travel costs and rent for a meeting room, the method proved cheaper than traditional group teaching in spite of the telephone charges. Group interaction normally depends upon visual cues, but their absence was not a handicap after two or three 'meetings'.

It is possible in some countries to dial for a popular gramophone record so there is no technical difficulty in providing a similar service with lectures. This could provide a valuable service for people in remote areas, the blind, and those who are housebound either because of physical handicaps or domestic duties. The method has obvious difficulties; interaction with the lecturer is impossible, telephone acoustics are not conducive to prolonged attention, visual teachings is not easy and supplementary methods are necessary for student discussions and submission of work. Ristenbatt has shown that pictures can be transmitted along telephone wires, but students will require the 'blackboard-by-wire' receivers. A limited system of this kind is available for general practitioner in Wisconsin.

Language Laboratories: The principles of programmed learning and the development of sophisticated audio-electronics encouraged the installation of language laboratories during the 1960's. It was believed that languages could be learned most efficiently if students received the stimulus of hearing the languages spoken properly, actively responded, possibly by initiating what was said, and then received feedback by hearing their own performances for themselves. Unfortunately, it is also necessary for students to be able to detect their own weaknesses, and since this may require the presence of a teacher or a fellow student, part of the attraction of the method is lost.

Since the benefits of programmed learning are at best marginal, the question arises of how far the effectiveness of language laboratories justifies their expense. Enquiries by Keating and P.D. Smith at the primary and secondary level have shown disappointing results in the United States. At the post-secondary level, students' improved motivation appears to be its chief advantage. Chomei and Houlihan have argued that the presence of the teacher is more important than is commonly supposed because the effectiveness of language laboratory teaching depends upon the immediacy of feedback.

On the other hand, Brown has described a method in which a conversation with a teacher is simulated and students reply in the foreign language during silences left on the tape-recording. Another method is for the student to switch over to a second channel while he responds. This enables the student to take his time and to reply at length. By either method the teacher's next pre-recorded contribution may seem unnatural. Nevertheless, in spite of all these doubts and difficulties, Banathy and Jordan found that adults taught by languages laboratory methods were seven times more articulate in the foreign language than those taught by traditional teaching. This seems a strong testimonial to the investment.

In terms of their educational effectiveness, films and television may be considered together. Broadly speaking, things that can be learned from one can be learned from the other. The major differences lie in the technical problems of their production. The minimum initial capital outlay for film production in educational institutions is probably less. The pictures usually have better definition, and at the present time colour productions are both better and cheaper on film. On the other hand, television technology is developing more rapidly. In particular, editing and modification of videotapes is relatively easy and this is an important consideration in post-secondary education. Because

videotape can be erased and reused. Once the necessary capital equipment has been obtained, television can be used for many purposes which would involve unthinkable expense if film was used.

For these reasons, television is rapidly surpassing film as teaching medium except for the use of film loops or combinations of media which include film. Most research on the use of film was published before 1960, and most on television after that date. What is remarkable is sharpness of the transition.

Much of the evidence on the effectiveness of films, particularly that relating to their long and short-term effects, is contradictory. In a well designed experiment, Lewis and Steinberg have shown that the use of film can result in significant increase in student's knowledge and could be a popular teaching method. An interesting experiment by Paulsen demonstrates that when tested immediately after the presentation of a film, students remembered details better than the story as a whole; but two years later when many details were forgotten, the story as a whole was remembered much better. This suggests not only that information learned is subsequently re-organised, but that optimum teaching effectiveness could be achieved if a film presentation is immediately followed by some activity requiring the relation of details to the story as a whole. Although Van der Voorde and Fraleigh reported that retention of information was better immediately following a film than after either lectures or reading, this finding could not be generalised as the novelty of the film was responsible. On the other hand, Foy and McCurrie have shown that films can be an effective teaching medium over a long period of time.

In an interesting series of experiments, Fraisse and Montmollin demonstrated that more than one-third of the visual content of films was forgotten immediately and what was remembered was inaccurate. Memory of the sound commentary was even less satisfactory. The chief factors influencing retention appeared to be the meaning and importance of the material and the length of shot used.

Investigations of the attitudinal effects of films also demonstrate the importance of distinguishing between long and short-term changes. Investigations demonstrating increases in aggression following films including violent scenes have used relatively short-term criteria. Tardy has shown that films do not bring about significant long-term changes in attitudes. The extent to which a student can identify with characters in a film appears to be an important factor affecting attitude change.

Films can be used to provide demonstrations of manual or other

practical skills. They may be made virtually perfect. They may be seen by many students at the same time, however small the objects shown. The span of time depicted can be lengthened by slow motion, compressed or edited. Repetition is easily possible and does not waste materials in the same way as repetition of a demonstration in chemistry or cookery. Evidence on the effectiveness of films for this purpose is mixed. Weiss found that dental skills were taught better by films than by traditional lectures and demonstrations; but Hughes found no significant difference using a silent film entitled 'How to inoculate a plate'. Class size, expense and ease of modification were high on their list of factors to be considered when deciding whether to use film.

One of the basic difficulties is that the effectiveness of a film depends not upon the medium itself, but on the appropriateness of the teaching techniques within it. What is appropriate in one college may not be appropriate in another. Experiments by Laner, Kanner and Rey reinforce the conclusions made for static visual aids. Complexity should always be avoided unless it is directly relevant to the teaching objectives. For example, line diagrams are more effective to teach manual skills than films of the skills themselves being performed. The inappropriateness of many films for teaching purposes arises from the attempt to teach too much. Francis favoured the development of single concept films for inter-institutional distribution as a support for, rather than a replacement of the teacher.

Chu and Schramm have surveyed 421 comparisons of television with traditional teaching reported in 207 separate investigations. Overall there is no significant difference between the methods but rather more studies favoured traditional teaching at the post-secondary level while the reverse was the case in school-based education. Most students preferred small discussion groups to television teaching but became more favourable towards television after they had experienced it. European evidence suggests that while adults may acquire a considerable amount of factual information from television, they are frequently imperceptive of its deeper significance. One study suggests that young people are more critical about the style of presentation of programmes than thoughtful about the contents.

Dumazedier has shown the importance of viewing in groups where the purpose of agricultural education includes attitude changes. This could be important in some developing countries. After an introductory talk he showed tele-recordings at tele-clubs and other community groups in agricultural areas in France and recorded the audience

reaction to specific problems and questions on agricultural innovation. He concluded that the combined use of the recordings and group discussion could stimulate thought and change attitudes.

There is no doubt that television teaching has come to stay. It has many characteristics which may sometimes be advantageous. Expensive programmes may be prepared contrary and relayed to a large number of colleges. Television can observe underwater, in confined spaces, from the air, in inclement conditions, in remote areas and where the presence of students would affect the observation. The cost of television teaching is likely to increase less in the near future than the cost of teachers' salaries and this is likely to decrease the class size at which television becomes cheaper than traditional teaching.

Computer Assisted Instruction (CAI): To many teachers computer assisted instruction may seem futuristic. To others it may seem a threat. The jobs a computer can perform include the presentation of information and questions, the provision of immediate knowledge of students' performance, routine calculations, bibliographic searches, demonstrations, the production of complex data for students, participation in games and simulations and the monitoring of student performance for teachers.

A major doubt of any college contemplating the use of CAI is its cost benefit. Educational economists give very varied estimates of costs which are, in any case, likely to change suddenly in either direction in a short time.

Layard has reported that the Plato IV system at the University of Illinois cost \$0.34-\$0.68 per student hour if each of 4000 terminals were used for 44 hours per week for 45 weeks per year. This intensity of usage seems optimistic.

A second major doubt with CAI concerns its effectiveness. Sokolow and Solberg found that cognitive objectives were achieved by CAI, but effective ones were not. In the Department of Engineering at the University Exeter, computers are used to perform routine calculations for students so that students may study the effect of varying parameters in complex engineering problems. The saving in time is considerable, but, although the students, therefore, have the opportunity to learn more, it does not necessarily follow that they take it.

So far economy of time seems to be the chief advantages of CAI, McKeachie has reported a number of experiments in which computers were used as complex teaching machines virtually giving individualized instruction, but it is doubtful whether the gains in

effectiveness, if any, justify the expense not only for computers but preparation time. In the United Kingdom 2 million £ have been invested in CAI research, but many of the projects have run into technical and organizational difficulties and have sometimes been based on shallow philosophies of education.

We may conclude that CAI is not yet a worthy investment for most countries.

Learning from group discussion

It is argued that the most important objective of post-secondary education are to teach students to think. The development of certain attitudes and satisfying inter-personal relationships are also important in most vocational situations. Figures 2 and 3 show that discussion methods are likely to achieve these more successfully than the traditional methods of lectures and private study. Consequently, they are the most important methods of teaching and learning in post-secondary education. This statement is made in the face of knowledge that many institutions neglect these methods.

There are two common difficulties that lead to this neglect. It is assumed that small group discussions methods require the presence of the teacher and it is evident that staff-student ratios do not permit the lavish expenditure of staff time that this would require. Secondly, teachers are not skilled in the management of small-groups and they find that students do not participate.

The Buzz-group method: The assumption that the teacher must be present is entirely false. It often arises from a confusion between learning and teaching and a failure to realize that it is the former that is important. There is an authoritarian assumption that nothing of value takes place unless the teacher is there to direct it and a failure to recognize that the dominant factor in the presence of the teacher is fear. By removing himself the teacher removes the major source of that fear so that discussions can flow more freely. There are ways of knowing what has taken place in a discussion other than being present at it.

Students are not taught how to discuss when at school; consequently, a major task of any teacher in post-secondary education is to teach his students how to learn from his class management—and this includes learning to learn in groups. A teacher who concentrates on his subject matter only does half his job. In Belgium, Dupont and Servais have

shown that by working in groups, students acquire greater independence of authority. Thus group learning is an aid to private study skills.

The buzz-group method is basic because it is probably the easiest of all methods to use. Buzz-groups are tutorless groups of two to six students, preferably three or four, who may discuss from half a minute to twenty minutes. Usually they are given a problem to solve, or an issue on which to form an opinion, and are required to write their answers on a sheet of paper which the teacher could ask to inspect. Thus students are left to tackle an academic problem in their own way, while the teacher has some sanction and check on their success. Students are usually introduced to the method, during a lecture of some other formal situation for a very short time with a very small problem so that they are hardly aware that a new method has been introduced. Momentary consultation with a neighbour often occurs naturally; the technique is to use it. Later, alternate rows may be asked to turn round to face the row behind so that groups larger than two are formed.

This technique can be used with classes of up to 400 but as they become larger, the teacher's task to see that all students are working well becomes more difficult. Another difficulty is that the method requires the students to work and think and they do not always do these readily; however if introduced to the method when they first arrive at college, they do not arrive at lectures with the expectation that they may sit passively while the teacher does the work.

The method has the advantages that it can be used in almost any teaching situation, including seminars and laboratory practicals. It may be used in a very *ad hoc* manner; and a very wide range of objectives may be achieved according to the problem students are required to discuss. Furthermore, Uren has shown that it can be a good 'leveller' in classes of mixed ability and, far from wasting time, saves lecture time because the lecturer can proceed from the level of knowledge that has been shared rather than from the level of weakest student on entering the room. (The belief that student discussion wastes time arises from the attitude of teachers who think of their own activity as being more important than that of the students and who emphasize knowledge rather than thought).

Brainstorming groups are thought to be particularly useful when creative solutions to problems are required. Groups of about half a dozen students are given a problem and first told to express any ideas, or germs of ideas, which occur to them. A group secretary notes them,

but the group is trained not to be critical at this stage because it is recognised that the criticism of fellow students also hinders the free flow of ideas from which creative solutions arise. In this way, ideas are placed in juxtaposition and original associations are more likely to occur by chance. Only later, when the free flow of ideas has ceased and those produced are dissociated from the students who produce them, is the group instructed to review the record of ideas more critically to produce a constructive solution to the problem.

There seems to be some evidence that this technique produces more original and creative solutions to complex problems than individual problem-solving, but because the group requires some training, the technique cannot easily be used with younger students. Furthermore, although the group product may be more creative, it does not follow that the creativity of individual students is enhanced. It is, therefore, a useful technique for a post-graduate research seminar when a researcher seeks suggestions on how to proceed in his investigations; but its use as a long-term teaching technique remains unproven. **Horse-shoe groups** may be an amalgamation of two buzz-groups and could vary in size from four to twelve students, but six is a very convenient number because groups larger than this tend to fragment. Chairs are arranged in a series of horse-shoe or 'u' shapes with the opening facing the front. The teacher may alternate lecturing with short periods of group problem-solving. The problems may be set and answered on a sheet of paper placed centrally on each table; they could consist of observing a map or specimen or sometimes require dissection or some other manual skill.

Unlike the use of buzz-groups, this technique requires some preplanning to arrange the furniture. In other respects it is very flexible, can be used with classes up to a hundred students and may achieve a wide range of objectives according to the problems set.

The rule here is simple, if a teacher wishes to teach analytical thinking, he must set a problem that requires it; if he wishes to train powers of judgement and evaluation, he must set a problem that uses these skills; and so on.

The method is useful for getting to know students when the class does not meet in smaller groups at other times. The teacher may visit each group in turn, closing the circle at the open end of the horse-shoe, yet move unobtrusively to the next group when he wishes. It is important however, to enter the group as a listener and not to disrupt it by immediate domination. For this purpose, it is useful to avoid

eye contact during the first half-minute.

Horse-shoe groups can be a very useful technique for revision just before examinations. If the problem set is an examination question, students soon discover that others would answer it quite differently with the result that their perception of issues is broadened. This is often an important educational objective and one that is difficult to achieve by other means. Horse-shoe groups are also a valuable introduction to case discussion and syndicate groups.

Obviously the salient characteristic of case discussion is that a particular case is discussed; thus theoretically the groups may be of any size and the teacher may or may not be present. Their purpose is to teach students to relate many different aspects of a subject together, and indeed, to relate many subjects together. It is intended to break down the rigid boundaries of knowledge established by syllabuses. For example in medicine a student may be expected to relate his knowledge of biochemistry, psychiatry, physiology and gerontology and his practical clinical experiences to deal with a patient with complications.

The teacher's skill in this method lies first in his careful selection of construction of the case to be considered; secondly, in the way he presents the relevant and irrelevant information to students; and finally in his ability to make sure that the students make the necessary relationships in their knowledge. There is a great temptation for teachers to intervene too much in case discussion, to do the students' work for them by over-prompting and thereby defeat the purpose of the method.

The case conference method requires participants to bring their own case material for discussion by the rest of the group. This method has obvious advantages in that students feel personally involved, they may use their own experience directly and each case can be considered in considerable depth by using the students as a resource; but it also has disadvantages in that its success depends upon how students present their cases, the cases selected may not be suitable and detailed 'public' consideration of a student's practical work can undermine his professional confidence when the opposite is badly needed.

From this we may see that the case discussion method is valuable and important but requires considerable skill from both the students and the teacher which both have to learn. A teacher who tries to use this method too soon will set himself low teaching standards.

Syndicate Groups may also be developed from horse-shoe groups.

The introduction they can give to project work and research is grossly neglected by most universities who expect students to be suddenly proficient in these skills when their previous experience has only been learning for examinations. The skills for enquiry and regurgitation are quite different.

In the syndicate method, a class is divided into groups of about five or six which are required to write a joint report upon either, the same or different topics. Each group, called a syndicate, is like a minigovernment commission instructed to enquire and report on a particular problem. They are given a reading list in which the items are wide-ranging in subject matter, but short and precisely specified. For example, a group required to give recommendations for the route to be taken by a new town bypass may be expected to read short extracts on concrete engineering, a poem on village life, the psychological effects of traffic noise, the economics of road transport, some meteorological reports, geological maps, legal documents and so on. The groups will usually distribute the readings amongst individual members so that each group has its own expert adviser on legal, economic, geological aesthetic and other specialized matters. Since the prescribed reading is usually insufficient to write an adequate report students will need to search the college library, carry out experiments, make observations of their own, or conduct other enquiries on their own initiative.

In this way the syndicate method teaches teamwork, committee procedure, library skills, complex problem-solving, interdisciplinary thinking and the beginnings of empirical enquiry. It is a popular method with older students, particularly when they have industrial or other experience which may contribute to the enquiry. The major objection and difficulty of the syndicate method is that students do not always write a joint report unless the teacher trains them from an early stage to question and criticize each other's work. To do this, the teacher circulates amongst the syndicate groups, challenging any individual student to justify any single sentence written by any member of the group. If a student cannot do this, or disagrees with the statement, he should have written a minority report. If the students are not trained to challenge each other's contributions in this way very early, the method can be very time-consuming for the limited objectives which are then achieved.

Many authoritarian teachers use *controlled discussion* in the belief that they are using group discussion. In truth, they understand neither

the meaning of a 'group' nor a 'discussion'. A 'group' is characterized by the ability of all its members to interact with each other. This method frequently consists of alternate contributions from students and the teacher. These are frequently restricted to factual questions and answers. Explicit permission for student-student interaction is sought from the teacher or chairman. Face-to-face interaction is prevented by fixed seats placed in rows all facing the same direction. Interaction and expression of opinion are not free because the teacher controls who may speak and is always entitled to the last word.

The method is derived from the conduct of scientific and public meetings, but when teaching, both the personal relationship and the way elements of a topic are related should be quite different. This misuse of a method from another context highlights in any common defects in current teaching methods. It shows the tendency of teachers to copy their methods from others rather than working out what is appropriate from first principles. The unwillingness of many teachers to relinquish tight control of the proceedings reflects their defensiveness when faced with students and their overconcentration on factual teaching to the exclusion of provoking thought. If Stone's finding that 70 per cent of student teachers are unwilling to ask a question in a class larger than 30 is generalizable, controlled discussion only permits participation by a few. Furthermore, because it is often used at the end of a lecture or other presentation, there is social pressure not to contribute so that the period may be concluded. Nevertheless, there are some circumstances with large numbers of students, when it is the only acceptable method. It is the method used by teachers with smaller classes at school so that students are accustomed to it and expect it at college. Teachers frequently do not realize that it requires considerable skill not only to observe the students and to encourage them to talk, but to keep quiet oneself. Thus, in spite of its acceptability and frequent use, its effectiveness remains doubtful.

The Seminar, in the sense of a discussion introduced by a short talk, essay or other presentation, is another method that has evolved from research meetings at which an expert presents his latest ideas for discussion with other experts. It assumes a background knowledge and willingness to participate on the part of all present.

These assumptions are not fulfilled in under-graduate seminars and consequently the method is inappropriate at this level; yet it is commonly used. The factors affecting group dynamics in this situation are worth attention. If one student is detailed to prepare a paper or essay, other

students will prepare less thoroughly, and together with the teacher, he will become a second expert in the group. Being aware of their relative ignorance the other students will hesitate to take a vocal role so that the seminar degenerates into an individual tutorial with an audience of silent students who cannot fully understand what is said.

Short seminars at the under-graduate level frequently never get off the ground because they never overcome the dominant motive of fear.

The objectives of free group discussion are concerned with attitude change, powers of reasoning and the development of perceptual skills. The method is 'free' in that the students decide the topic to be discussed while the teacher is more concerned with maintaining the group as a group, and with clarification, rather than adding to its contents. Commonly a group of up to fifteen students may read an article, look at a film, observe a specimen or share some other common experience for a few minutes before the discussion begins. The teacher does not normally take an active part in the discussion, but needs to be skilled in observing and listening to it.

The first stage of the discussion is for the members of the group to realize that they have different perceptions of an apparently common experience. If this does not emerge of its own accord, the teacher may need to ask a few pertinent questions to elicit it. The second stage is for the group to realize that their perceptions are based upon different preconceptions, patterns of reasoning and attitudes. Thus these differences are made over while in normal life they are difficult to recognize because they remain unexpressed. Only when attitudes and preconceptions become overt and expressed can they then be considered. By consideration, they may be changed rationally and rational discussion is central to academic life and the objectives of post-secondary education.

These stages may take several weeks to evolve. Frequently students are disturbed by the teacher's refusal to take the traditional authoritarian role. Consequently the group sometimes goes through a period of resentment and hostility before the students willingly take responsibility for their own learning and discussion. Getting students to take this responsibility is an important but frequently neglected objective in higher education.

The method is difficult and sometimes fails, but its proponents e.g. James and Barnett have shown that it can be effective in achieving objectives not attainable by other methods.

T-Groups are sometimes known as 'sensitive groups' or 'encounter

groups'. The 'T' in T-groups stand for training. According to P.B. Smith, the purpose of T-groups is to increase students' sensitivity to how others perceive their behaviour and to develop diagnostic skills with reference to inter-personal behaviour. For this reason, this is a widely used technique in management training and is increasingly practised in all forms of training concerned with inter-personal relationships.

As in free group discussion, the leader does not take a vocal role but listens and observes. The difference is that discussion, is not initiated by a common presentation; students are asked to discuss how they feel towards other members of the group. Thus it is not perception of an external object that is discussed, but perception of one's own feelings.

If not handled by a leader who has long experience of the method himself and is well-adjusted and aware of his own personality, the method can be disastrous and personally damaging. Back has described courses in Italy, Israel and the United States which have not been successful in reconciling national and ethnic differences. In other study involving the discussion of their national border disputes by intellectuals from Somalia, Kenya and Ethiopia, the participants judged the T-group to be a miserable failure while the American organizers perceived all the encouraging aspects and were moderately satisfied with the encounter.

At the University of Boston, Massachusetts, Bennett has used what he calls 'confrontation groups', in which the leader forces participants to contemplate their own ethnic, sexual, age or other differences by remarks such as 'you are reacting to him in this way because you are white and he is black' or 'he is a man, and you are woman', and so on. The intention is that participants will come to terms with their fundamental differences by being subjected to hypersensitivity.

There has been a great deal of interest in these methods. Indeed, Back cites no less than 141 research reports evaluating sensitivity training published between 1945 and 1970 and at times the 'encounter movement' had an almost religious character. The method has frequently been abused and we may conclude that it should only be used by leaders who know what they are doing.

One-to-one teaching There are three methods, of this kind, individual tutorials, student counselling and student-to-student counselling.

The individual tutorial method has evolved from the medieval university. Typically a student may discuss work he has submitted

to a tutor. There have been few empirical investigations of the effectiveness of this method. It may be expected that students should derive great benefit from such individual attention from highly qualified staff but it is also true that students need the ability to benefit from it.

The method only seems practicable in a highly selective educational system with favourable staff-student ratios. It may be possible and suitable at post-graduate level but in most countries is impracticable.

Just as a book cannot train a good T-group leader, these pages cannot adequately describe the work of student counsellors. It has been a constant theme of this document that post-secondary education should be social activity. Consequently it is not only an intellectual but also an emotional endeavour. Since we have seen that students motivation is a major factor affecting their academic performance, teachers in post-secondary education have a responsibility for the emotional welfare of their students. Too few teachers recognize this responsibility let alone practise it. In the United Kingdom, Ryle has suggested that 2 per cent of students experience severe psychiatric illness requiring hospital admission.

Laboratory classes: Laboratory teaching is perhaps the most obvious example. In spite of the high levels of investment in terms of money, time, equipment and labour in laboratory teaching the amount of experimental evidence of its effectiveness is minute. It seems as if scientists have conducted experiments on almost everything except the way they are taught to experiment. The most extensive series of experiments in science teaching have been conducted by Kruglak. These experiments cast some doubt upon the central role usually described to laboratory experience in science teaching. Kruglak used paper and pencil tests and measures of laboratory behaviour to examine the effect of school laboratory experience upon performance in the same subjects at college. His findings may be interpreted as showing that laboratory skills and knowledge of a subject are independent abilities and that experience at school does improve later performance. However a large number of experiments have found no measurable advantages in laboratory experience. However, these negative results may reflect the inadequate criterion tests used. Experiments testing more than factual knowledge have yielded more interesting results. For example, Grozier showed that laboratory experience changed scientific attitudes and improved the ability to interpret scientific data. Lahti found that a problem-solving approach was more effective than a

thematic discussion, the description of a case history or a question-and answer session.

However, we must conclude that the case for laboratory teaching remains unsubstantiated.

There is a similar lack of evidence on the effectiveness of projects. This seems to be more excusable because students in the same class usually do different projects so that comparability for experimental purposes is difficult.

The major characteristic of a project is that students produce a thesis, a plan, a model, a written or oral report, or some other piece of work. Although superficially the objective may appear to be the production of this work, the real objective lie in the learning and the techniques used when producing it. Adderley has claimed that projects teach techniques of research and independent work by training students to search for, select, collect and present information. Team project may break down the isolation of under-graduate study, require co-operation, tact, diplomacy, at sometime during their course have emotional or psychological problems requiring some treatment; and a further 20 per cent experience temporary psychological or psychosomatic symptoms. These figures may be compared with 10 to 15 per cent of the population of the same age who report with neuroses to medical practitioners. The proportion of woman students requiring help is almost twice as great as for men and it should be remembered that in most cultures women experience role conflicts between career ambitious and family expectations. At the University of Melbourne, Priestley has estimated that one-sixth of the student reporting to the student Health Centre had problems requiring psychiatric attention. In New York Waston found 25 per cent suffered from maturational stresses 60 per cent from family problems, and 10 to 18 per cent from depression.

Some American universities employ over fifty professional students counsellors, but in Australia a ratio of one counsellor to 3,000 students is common. Counsellors vary in their orientation but psycho-analytic theories have had considerable influence. There is little empirical evidence on the effectiveness of counselling. At the University of Minnesota, Campbell found that counselled students had a 25 per cent higher graduation rate than a control group. At a Scottish University introduction of a counselling service halted the increasing rate of student wastage.

Yet it should be emphasized that student counselling is not only

concerned with 'problem cases'. It is a general service to provide any kind of help to students at a difficult time in their lives. It should not be confused with Student Health Services. All people require advice from others at time and we normally do this by consulting someone we know; but upon arrival at college students may have no-one to whom they can turn if counselling services are not provided. The stigma that there is something wrong with a student if he seeks advice is damaging both to students and their counselling services.

Laboratory work and simulation techniques: There is an extremely wide range of teaching methods under this heading and they can only be considered cursorily here. Indeed these methods are so varied that there is no established satisfactory classification. compared with presentation and discussion methods, their salient characteristics are a relatively high level of activity from the students and a more direct experience of the skills being taught, leadership, decision-making and group techniques and also provide considerable enjoyment.

Research investigations that have been conducted show little or no advantage in projects compared with traditional methods; but, as with laboratory teaching, this may reflect the inadequate criterion tests used. *Simulation and gaming techniques* normally involve designing an operational model of a real situation. With some exceptions, there is evidence that simulated practice is no more effective than experience of the real situation, but it is considerably better than no practice at all. The exceptions are related to factors of cost high risk and anxiety. For example, it is cheaper and more effective to teach aircrafts pilots on simulators than to place them in the anxiety and risk of real flight. Yet for teaching many motor skills, the cost in terms of space and equipment for mechanical simulators may be as great as using the real equipment.

For this reason, much of the early innovation in simulation techniques has been in the field of social skills. Role play can be used to teach social and practical skills by asking students to act roles which include the desired behaviour. A good role play usually has clearly defined though not necessarily explicit purpose, fairly realistic situation, a number of willing participants, adequate time and a fairly non-authoritarian approach from the teacher. The teacher usually first describes the purpose of the exercise and then the roles to be played. Students may be given partial or conflicting information; and sometimes information that has been withheld may be introduced as

the acting proceeds.

When students are asked to identify with a role with which they are unfamiliar, they frequently become more favourable in attitude towards those who normally work in this situation. Thus, role play creates opportunities or new perceptions with consequent changes in attitude.

Games frequently have a competitive element. For example, at North-Western University, Guetzkow simulated international diplomacy by requiring students to play the roles of diplomats from different countries in specified situations. The specifications of these situations constitute the rules of the game. Probably the best known business game is Monopoly, but it has obvious limitations for educational purposes. The Esso Business Game enables students to experience various types of business activity by dividing them into groups representing different companies. Each company must plan its production and marketing strategy. As in real life, chance factors are introduced, information may become available to some companies and not others and the economic health of the company depends upon a multiplicity of interesting factors.

According to Walford, a teacher considering the use of games should first ask whether it is an appropriate method; then whether the game is sufficiently realistic; and thirdly whether he is capable of organizing it. A common error is to spend too long explaining the rules. These can be explained as the game proceeds, particularly as it is often desirable to elaborate and modify the rules progressively to stretch the students' imagination and ability and increase the simulation of reality.

Micro-teaching: is another kind of simulation. Teachers or trainee teachers, may teach a small part of lesson which is recorded. The pupils may complete a questionnaire which the supervisor uses in conjunction with his notes to suggest ways in which the teachers behaviour could profitably be modified. The trainee then teaches the micro-lesson again to another class attempting to follow the suggestions. The process may be repeated ad infinitum if suitable classes are available, with successive modification of performance towards 'perfection'; but it is usually advisable to give the trainee an opportunity to prepare another topic to use with one of the same classes some time later.

Micro-teaching is a technique designed for training teachers. Its principles may be used to modify my other kinds of professional behaviour, but so far, have not been extensively applied in other fields.

Clinical teaching in medicine and field work in geology are examples of timehonoured techniques specific to a narrow range of disciplines which use the simulation principle.

Conclusion In this chapter, a number of teaching methods have been classified under three headings. Their treatment has been necessarily cursory and many techniques have been omitted altogether. Greater detail together with research findings may be found in Beard and Bligh *Research into teaching methods in higher education* (Society for Research into Higher Education) or Bligh, Ebrahim, Jaques and Pipper *Teaching Students* (Exter University).

Lesson Planning

S.P. AHLUWALIA

Instructional Objectives

Planning is essential not only in teaching but in all spheres of human activity. Probably there is no type of work where the results of poor planning are so devastating as in teaching.

Why should a lesson be planned ?

R.L. Stevenson said, "To every teacher I would say, Always plan out your lesson beforehand but do not be slave to it." Bagley has put it thus, "However able and experienced the teacher, he could do never without his preliminary preparation." To be effective, every intelligent worker, plans out his work. A surgeon diagnoses the case, prepares his surgical instruments before he puts the patient on the operation table, a lawyer makes attempts to anticipate and prepare for every move in the court, an engineer prepares his blue-print before he actually starts the construction work of a bridge or a building, the house mistress plans the details of the daily meals, the sales manager gives careful attention to every step in a proposed selling campaign. So must a teacher plan and prepare his work. I.K. Davies observes "Lesson must be prepared for there is nothing so fatal to a teacher's progress as unpreparedness." Ryburn states the importance of this concept as, *"To teach we must use experience already gained as starting point of work."*

What is a lesson plan ?

L.N. Boosing has given a comprehensive definition of a lesson plan; "Lesson plan is the title given to a statement of the achievements to be realized and the specific meaning by which these are to be attained as a result of the activities engaged during the period."

Bining and Bining observe, "Daily lesson planning involves defining the objectives, selecting and arranging the subject matter and determining the method of procedure."

A lesson plan indicates the aims to be realised by teaching a lesson, the methods to be employed and the activities to be undertaken in the class so that it is engaged for the realisation of the aim. A lesson plan is actually a plan of action. It includes:

- 1) The working philosophy of the teacher.
- 2) His information and understanding of his pupils.
- 3) His comprehension of the objectives of education.,
- 4) His knowledge of the material to be taught.
- 5) His ability to use effective methods of education.

A lesson plan is the programme of the teacher which indicates class and also the method of doing it well. The lesson plan reflects the teacher's skill, intelligence, ability and his personality.

What are the essentials of a good lesson plan?

Generally speaking the following are the characteristics of a good lesson plan:

1. It should be written. A lesson plan preferably be written and should not remain at the oral or mental stage. Panton writes, "The teacher is strongly advised, at least in the early stages, to make a written note of his preparation. Memory sometimes proves a treacherous servant, especially when his attention is divided". It is advisable, however, not to teach from notes, "Excessive reliance upon these may undermine the teacher's confidence so that he can never do without them. If, however, the teacher has occasion while teaching to refer to his notes, it is better for him to do so openly than to take a suspicious keep at them. He loses nothing in the eye of the children by the former method whereas by the second he is likely to be misjudged by his pupils." Writing helps in clarifying thoughts and concentration.

2. It should have clear aims. The lesson plan should clearly state the objectives, general and specific, to be achieved.

3. It should be linked with the previous knowledge. The plan should

not let the lesson remain an isolated one. It should have its basis on the background of the class. It should grow out of what the pupils have already learnt.

4. It should show techniques of teaching. It should state clearly the various steps that the teacher is going to take, and also various questions that he will ask.

5. It should show the illustrative aids. The illustrative aids to be used should be shown in the lesson plan.

6. It should contain suitable subject matter. The materials of instruction or subject matter should be carefully selected or organised.

7. It should provide for audio-visual aids. To motivate the lesson, there must be provision for audio-visual aids.

8. It should be divided into units. The plan should be divided into units, but care should be taken to see that the lesson remains an integrated whole and every unit develops from the previous and submerges into the next one.

9. It should provide for activity. The children must be given enough scope to be active. It should not make them mere passive listeners.

10. It should provide for individual differences. The plan should be prepared in such a way as it does full justice to all the students of varied capacities.

11. It should show certain routine things. The plan should indicate the duration of the period, the period itself, average age of the students, subject and the class.

12. It should be flexible. The plan is a means and not an end. It is wrong to follow it slavishly. It is an instrument and should be used as such. The teacher should be prepared to change his teaching methods from those as referred to in the plan, if need be.

13. It should include the summary. The lesson plan should include the summary of whole lesson which is to be built up on the blackboard with the help of the students.

14. It should refer to reference books. The plan becomes more useful if it refers to references or other reading material. This will encourage the bright students to read extra books. Care should be taken to suggest only those books which are available in the library.

15. It should include assignment for students. A good lesson plan cannot be thought of without any assignments for the students. The assignments may be in the form of recapitulatory questions or home task.

16. It should provide for self-criticism. A good lesson plan must have

some place for self-criticism. The teacher should put some questions to himself and find out the answer and judge thereby the effectiveness of the lesson or otherwise.

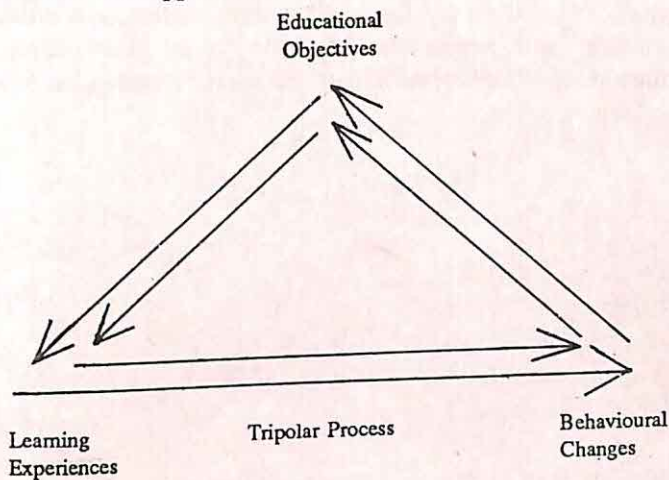
Advantages of lesson planning

1. Lesson planning providing the guidelines, to the teachers and especially the beginning teachers for the teaching-learning process.
2. Lesson planning provides awareness of teaching objectives.
3. Lesson planning provides awareness of the structure and content with which teacher is involved in the direction to achieve the objectives.
4. Task analysis in the lesson planning enables the teacher to finalise the sequence of content to be presented.
5. Lesson planning relates the learning structures with teaching activities.
6. Lesson planning enables the teacher to maintain the sequence of content presentation and prevents him deviating from the topic.
7. Lesson planning enables the teacher to organise classroom teaching activities by considering the individual differences of students.
8. Lesson planning enables the teacher to develop apperceptive mass of the students by linking the new knowledge with the previous knowledge of the students.
9. Lesson planning enables the teacher to determine appropriate teaching aids, strategies and tactics in the presentation of the content to make it more relevant, lively, meaningful, effective and inspirational.
10. Lesson planning enables the teacher to relate the learning structures with teaching activities.
11. Lesson planning develops the reasoning, imagination and decision-making ability of the teachers.
12. Lesson planning facilitates effective and efficient teaching.
13. Lesson planning develops confidence in the teacher.

Approaches to lesson planning

I. THE HERBARTIAN APPROACH—This is based on the apperceptive mass theory of learning which regards the learner as a "clean slate" and that all the knowledge is given from outside. New knowledge is imparted by linking with old knowledge. The teaching content is presented into units. The famous Herbartian steps are—introduction presentation, organisation, comparison and evaluation. The main emphasis is on content presentation.

II. EVALUATION APPROACH—B.S. Bloom is the originator of this approach. According to this approach, teaching activities must be objective centred. Bloom considers education as a tripolar process, educational objectives; learning experiences and change of behaviour. This approach is objective rather than 'content centred'.



Some salient features of evaluation approach Are

1. Education is a purposeful process.
2. Teaching activities are objective centres.
3. Evaluation includes all activities of teaching and not only student's performance.
4. It is not confined to the academic achievement of the student but covers the total behavioural changes.
5. Evaluation approach takes into consideration the learning objectives, methods and devices of providing learning experiences.
6. Students' performances are evaluated and measured in terms of learning objectives and not achievement of the content. It may cover cognitive, affective and psychomotor learning outcomes.

The three steps in evaluation approach are

- (i) Formulating educational objectives
- (ii) Creating learning experiences
- (iii) Evaluating the change in behaviour

III. THE PROJECT APPROACH—This approach developed by W.H. Kilpatrick and John Dewey stresses on self-activity, social activity and real activities of life.

IV. THE UNIT APPROACH—Henry C. Morrison has based his approach on Units. He has given five steps for his "cyclic plan of teaching". These steps are Exploration, Presentation, Assimilation, Organization and Recitation. Morrison gives main stress on assimilation aspects whereas Herbart stresses the presentation aspects of teaching.

Extension Education

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Introduction

Universities have been largely concerned with two important functions, viz., teaching and research. They have been accessible largely to a limited number of people. Large masses of people are also deprived of any tangible benefits of the educational system as such. Consequently illiteracy, social and cultural deprivations and poverty are on the increase. Large sections of our population are deprived for their legitimate social and economic opportunities so essential for removal of the inequitable social order. There is now a growing realisation that universities, though concerned with higher learning, have an obligation to get intimately involved in the development of the community. Accordingly extension education has also been accepted as one of the important functions of higher education.

Objectives

The following are some of the envisaged objectives of extension education:

1. To enable universities to establish the necessary linkage with the community with a view to fostering social change through meaningful and mutually beneficial relationships and interactions by offering need-based and relevant educational programmes that may ultimately

facilitate self-reliance.

2. To provide opportunities for disseminating knowledge in all walks of life, in different segments of population, to enable individuals and groups to fill out the gaps in their intellectual growth, enhance professional and technical competence, and promote understanding of contemporary issues.

3. To cater to the felt needs of all sections of society but specially to the needs of the less privileged and under-privileged sections in order to secure their effective participation in the development process.

4. To enrich higher education by integrating continuing and adult education programmes and extension work in the system, thus providing opportunities to remove its insularity.

5. To provide an opportunity to faculty and students to sensitize themselves with contemporary problems and realities by exposure through field experiences.

6. Faculty and student participation in Extension Research and Action Research in selected areas in relation to major problems of development.

The programme of extension education can be broadly conceived into four categories:

- I. Awareness and developemnt of general interest in contemporary affairs.
- II. Imparting and improving professional skills through special training.
- III. Imparting functional literacy and numeracy, post-literacy and supplementary education through non-formal programmes.
- IV. Developing currciular linkages between field work and action.

Transition: A change of emphasis

In the Indian context the idea of the extension programme was introduced to college/university campus out of an altruistic concern of a social mission of institutions of higher learning through programmes like NSS and Adult Education in which student and teacher often went out to the under-privileged sections of the community around the campus or in some cases getting involved with developmental programme in far and nearby villages. At this stage it remained as an out reach programme, mostly a service-oriented one,

the university/college being a giver and in its generous moments a "sponsoring agency" of developmental programmes.

However, some of the community experience of the "campus dwellers" stimulated educationists to conceive it as an educational endeavour where both the students and the community could use it as a regular teaching-learning process. Thus, the emerging concern is to use the participatory experience as an academic activity which brings together the "campus" and the "community" as co-learners by transforming extension work as a more effective educational opportunity.

Objective of extension education at college level

- I. (a) Knowing the community. Socio-cultural, economic dynamics of the society structure which is operating-structural hierarchy.
- (b) Self-reliant culture *vis-a-vis* problem identification, inputs available and utilisation of planning, target identification, monitoring and evaluation.
- (c) Communication of knowledge (reappraisal of the existing knowledge)
- (d) Generation of knowledge : Combination of theory and practice in order to impart clarity to academic concepts.

In brief these may be stated as:

- i. Conscientisation of target groups (awareness),
- ii. Transmission of knowledge and skill, and
- iii. Research

A few points with regard to implications, applications, and procedure are given in Appendix to this module.

Place of method in teaching-learning process

The major use of this method will be to make the educational process socially relevant and to develop self-reliance culture (both for the student and the community) by the application of knowledge to specific situations.

Improvement and innovations in method

GENERAL:— An attitudinal change has to take place in using extension in the teaching-learning process, i.e. the student has to assume the role of a co-learner with the members of the community

through participation in the activities of the community, including knowledge preserved through oral traditions (subject to verification and supportive evidence from other sources).

SUBJECT SPECIFIC—Examples

SOCIOLOGY :— Family system, caste relations and group tensions, modes of culture, preservation.

PSYCHOLOGY :— Leadership, child rearing practices, attitudinal formation and change, marital harmony and family life, old age problems, coping behaviour in relation to poverty, disease, superstition and changing times.

LANGUAGE :— Preservation of literature, variation of expressions in colloquial forms, phonetic emphasis, vocabulary and expression of abstract ideas, folk literature.

ZOOLOGY :— Identification and classification, animals, birds (in the immediate environment), dairy development and breeding and development of healthy animals for agricultural operations and other human use; diseases, etc.

BOTANY : — Identification and classification of plants, etc. preservation of ecological balance, environmental picture, developing and ability to apply modern knowledge to introduce new species of plants, fruit trees, etc.

PHYSICS : — Energy problems—identifying existing energy resources and locating potential and viable alternative resources, atmospheric studies.

COMMERCE : — The problems of trading practices—marketing and communication—accounting in traditional ways and introduction of modern ways and finding out their effectiveness; transport problems.

Effective ways of using Teaching Aids : Examples

— Making posters and visual exhibits related to knowledge pertaining to the community and placing them at strategic points.

— Showing short movies related to needs and problems and later generating discussions among groups and individuals.

— Recording of oral sources of knowledge by using tape recorders/video sets.

— Demonstrating the evidence of "invisible knowledge" about germs, diseases, microbiological perspective of life and other fields of life.

- Exploratory approach to the study of the immediate environmental and geographical conditions.
- Using folk art as a means of communication and recording of knowledge, etc.
- Role playing-dramatising specific problems etc.

Advantages

Acceptance of extension work as a third dimension of universities is an ideal and welcome feature. Extension education helps to link the university with the community by allowing the university to share its knowledge and technology with the surrounding community for mutual benefit. Extension education also helps maintain standards in teaching and research. Universities through research can identify areas of human needs and problems, and can suggest possible solutions. Extension programmes, therefore, play a significant part from the point of view of bringing about the social transformation to which the country has committed itself.

Disadvantages

If a person who has no deep conviction and knowledge of extension activities is entrusted with the programmes, successful academicians and administrators with social commitment should be preferred. The success of the extension programmes depends on the organisational ability, dynamism, initiative, knowledge and perseverance of the persons in charge, the project leader. A gifted, and dedicated, project leader will ensure that the programme does not become routine, mechanical and uninteresting.

Concluding Remarks

In conclusion it may be said that extension education at present could serve to expose academicians to the socio-cultural realities of life, bringing a new dimension of social relevance and practical orientation to the teaching-learning process. As it is practised now, its scope is limited to a general gain of creating such awareness and perhaps, not a specific gain related to all areas of academic disciplines. However, there is plenty of scope for each discipline to explore and experiment with this method. Extension work not being a classroom method of teaching, could be profitably used in conjunction with other methods

directly related to the subject matter. The art of learning from the community need not be limited to the under-privileged alone; it could extend to all of society. The focus on under privileged groups is required to drive home the social responsibility of the academic community and its role in hastening the development process of the nation. More experimentation with the method by concerned academicians will enable it to find more specific application and seek its own level of perfection as a prominent teaching method for gainful use to specific areas of study.

APPENDIX**Implications, Applications, Placement, Skills and Procedure****IMPLICATIONS**

Extension education must adequately be linked with regular academic work at the universities/ college level. It could find at least three main areas of operation :

1. Placement of extension education in the curricula separately.
2. Treatment of extension education as a logical outcome of the curricula for its application to societal needs and in making formal education socially relevant.
3. Its use in university continuing-education curriculum.

APPLICATION

1. Extension education is a response to the new dimension of education-traditional and social.
2. Social relevance.
3. Instrument of change plus social welfare concept of education.
4. Theory plus practice, generation of knowledge, where paucity of knowledge exists.

PLACEMENT

1. Extension work should also be treated as curricular activity, it can be treated as a credit course.
2. Additional activity : NSS, NCC.
3. Extension work flows from curricula : it is the application of knowledge:
 - (a) to communicate knowledge,
 - (b) to generate knowledge where gaps exist,
 - (c) to learn from the community, e.g.

(Chemistry—soil analysis
Biology—Plants and living creatures).

The main source of information is oral, to be supported by others at the community level especially in the rural sector and among under-privileged groups.

SKILLS

1. Observation-cum-participatory skill
2. Communication skills:
 - (a) Active involvement of the community.
 - (b) Awareness of needs, problems, aspirations of people.
 - (c) Exchange of ideas, personal contact, group discussions, administration, etc.
 - (d) Ability to record information.
 - (e) Ability to analyse and disseminate.
3. Problem solving

PROCEDURE

Participatory—organisation of village committees—problems, inputs, appraisal of value system.

Group Involvement Some Examples

- Women, rural and slum areas
- Scheduled castes and scheduled tribes
- Unemployed youth with some schooling
- School dropouts
- Unemployed youth without some schooling
- Handicapped
- Workers in unorganised sectors
- Workers in the organised sectors—Teachers—primary, secondary and handicapped

University Constraints

- Universities have institutional rigidities which do not allow them to respond quickly to extension activities.
- Universities lack depth in understanding the community (at least at present).
- Third world universities are often understaffed.
- University experience in managing multidisciplinary projects is limited.
- Techniques and methodologies used in first world universities which are frequently borrowed, are often inappropriate for the third world environment.

EVALUATION IN EDUCATION

Student and Course Evaluation

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NAMITA RANGANATHAN

Introduction

Evaluation is a continuous process of collecting and interpreting evidence or information in order to assess decisions made in designing and conducting a course of study (Davis, *et al.*, 1974).

In designing a course, one has to take a series of decisions regarding different aspects of the course, such as objectives to be achieved, topics to be covered, the sequence of presentation of topics, the amount of time devoted to each topic, examples to be used, procedures to be employed for presentation of information, how and when to evaluate student achievement, and so on. For each choice, the teacher may like to know: was his decision correct? Answers to questions like these can be provided by means of proper evaluation procedures.

The central purpose of this module is, therefore, to describe procedures for improvement of student and course evaluation in college settings. For convenience the subject matter has been presented in the following way:

I. Introduction

II. Plan of Evaluation

III. Objectives of Learning

IV. Procedures of Evaluation

V. Interpretation and use of information

VI. Summary, and VII. References.

Plan of Evaluation

An early important step in designing a course is to prepare a detailed plan of evaluation. This plan consists of precise answers to four basic questions: What, How, When and Why. Answers to these questions are attempted in the following paragraphs.

WHAT TO EVALUATE? The question refers to objects of evaluation which are many and varied. For the present we shall be concerned with measuring student achievement in subjects and assessing the efficiency and effectiveness of instructional procedures.

HOW TO EVALUATE? This question implies the procedures to be employed in carrying out reliable, valid and objective assessment of student achievement and instructional procedures. The actual procedures depend upon the learning objectives for which a course is designed. For the purpose of measuring student achievement, the teacher should design written, practical or oral examinations depending upon the requirements of a particular subject and keeping in view the properties of a good evaluation instrument. The requirements are operationalised in the following section in the form of steps to be taken for construction of achievement examinations.

For obtaining information about the teacher and the course, the teacher can employ a rating method. In this procedure, the students are asked to give their judgements on different aspects of teacher behaviour and the course. The rating scales are simpler to prepare and easier in administration. In spite of its imperfections, this method does enable the teacher to obtain immediate and useful feedback in the form of student reactions in improving instruction.

WHEN TO EVALUATE? This question refers to the time(s) when information is to be collected. Consideration of this aspect affords the teacher an opportunity to collect information he needs when it is available. For example, the information about questions like, whether the students who take the course actually possess the pre-requisite entry abilities and skills; whether they have understood the learning objectives of the course,—can only be collected at the beginning of the course. Similarly, after completion of each major unit of the content, the teacher should give a test of that unit. This will give him an opportunity to know whether the students have accomplished the

learning objectives of the portion already taught. This also informs him as to how many students are ready to proceed to the next unit of the course. Now, it is clear that the teacher has to prepare a time schedule for collection of information on different aspects of the course.

WHY TO EVALUATE? This question refers to purposes for which information about student achievement and actual running of the course is collected. The overall purpose is to improve the work in the college. The purpose of evaluation will vary according to the object being evaluated. Thus the purposes of measuring student achievement are to know: whether the students are ready to take the course; whether they need any further remedial course; whether they have accomplished the learning objectives; which students have failed to achieve which objectives; why they have failed to do so; and what aspects of the instructional procedures need improvement. Proper answers to these questions will provide information that can be used in preparing and implementing action plans for improvement of overall performance of learning in higher education.

Objectives of Learning

Learning objectives are basic to the entire process of instruction and evaluation. If objectives of learning are not stated clearly and unambiguously, it will not be possible to organise precise instructional procedures for accomplishing them. It will also not be possible to measure and to evaluate them.

A learning objective is a description of behaviour expected of a learner after instruction. A learning objective contains three types of information: (a) a statement of behaviour that can be observed or recorded, (b) a statement of standards or level of competence to be reached in that behaviour, and (c) a statement of conditions under which mastery of the required behaviour will be observed or recorded. (Mc. Garth, 1980)

It is, therefore, necessary to write objectives in such a way that the above three types of information are included. In doing so, teachers should use specific action words such as select, assemble, state, solve, list, discriminate, construct, etc., which can be observed and recorded; they should avoid using phrases like, know, understand, grasp the significance of, encourage, etc., which cannot be observed or recorded.

Procedures of Evaluation

This section deals with the preparation and implementation of

procedures for measurement of student achievement and evaluation of teachers behaviour and the course.

Student Evaluation

I. DESIGN OF A QUESTION PAPER: The design of a question paper given below describes the procedures in the construction of a good question paper or a test of achievement in a subject of study. The principles of construction of a question paper, however, remain the same whether it is used,

- (a) as an admission test in the beginning of the course to determine the skills and the abilities of student who enter the course; or,
- (b) as a unit test during the course to assess the progress of students after one or more units have been taught; or,
- (c) as a terminal test at the end of the course to measure achievement of students in a subject.

II. WEIGHTAGE OF OBJECTIVES: All objectives of learning a particular subject for a particular year of students should be listed. The teachers or paper-setter should then decide the percentage of marks to be allotted to each individual objectives according to the importance of a particular objective for a particular subject.

Table 1
Weightage to Objectives

<i>Objective</i>	<i>Marks</i>	<i>Percentage</i>
Knowledge	16	64
Application	7	28
Skill	2	8
Total	25	100

In subjects where one or more types of examination are necessary the marks should be allocated to written, practical or oral forms of examination according to their importance in that subject.

III. WEIGHTAGE TO CONTENT - The teachers should list the topics to be covered and allocate the percentage of marks as shown in Table 2.

Table 2
Weightage to sub-units of Content

<i>Sub-unit</i>	<i>Marks</i>	<i>percent</i>
Concept	2	8
Triangles, Theorem	8	32
Triangles, riders	9	36
Construction	2	8
Numericals	4	16
Total	25	100

This will depend upon the adequacy of the area for testing, the desired objectives and its importance for further learning. Basing questions or items on learning objectives and content will ensure validity of the test. The information given in Tables 1 and 2 is combined in Table 3.

Table 3
Objective—Content Matrix specifying Number of Questions and weightage in marks for a unit in similarity of Triangles Objectives

<i>Sub-units</i>	<i>Knowledge</i>	<i>Application</i>	<i>Skill</i>	<i>Total</i>
Concept	2(2)*	—	—	2(2)
Triangles, Theorems	1(5)	3(3)	—	4(8)
Triangles, riders	2(4)	5(6)	—	7(10)
Construction	—	—	1(2)	1(2)
Numericals	1(1)	1(2)	—	2(3)
Total	9(15)	6(8)	1(2)	16(25)

* Figures within parentheses indicate weightage in terms of marks while those outside indicate the number of questions.

It provides a complete blueprint of the question paper. This procedure ensures that the learning objectives, contents, and their emphasis included in designing a course, are properly reflected in the question paper.

IV. WEIGHTAGE TO FORMS OF QUESTIONS: This pertains to the percentage of marks to be set aside for essay, short answer, and objective type questions. This will depend upon the suitability of each form of question for testing a particular objective and content area. For example, essay questions are suitable and even desirable for testing written expression of students in a language subject, while objective and short answer type questions are suitable for testing in content subjects.

V. NUMBER OF QUESTIONS: The teacher should decide the total number of questions to be set in a question paper. This number will depend upon the forms of questions to be used, difficulty level of the question to be set, and the total time available for answering the paper.

VI. TESTING TIME: The time required for solving all the questions in the questions paper should be taken into consideration while deciding the length of the question paper. It is, therefore, necessary to estimate time required for answering each question in order to arrive at the total time needed for answering the whole paper. Suitable modifications should be made wherever necessary. One way of doing this is to write down exact answers to the questions. Besides arriving at the total time required for answering the whole paper, the step will make available model answers. It will also make the teacher aware of lack of clarity and ambiguity in the language of the questions and help him remove the defects.

VII. DIFFICULTY LEVEL: The teacher should ensure that the paper is neither too difficult nor too easy. He should provide questions for all levels of student ability. Thus he should see that the paper contains roughly 20 per cent easy questions, 20 per cent difficult questions and 60 per cent questions of average difficulty.

VIII. OPTIONS: One of the functions the examination is designed to serve is to provide a common yardstick for all the students to ensure the comparability of marks of candidates. Provision of a large number of options in the question paper, therefore, defeats the very purpose for which the question paper is set. In addition it encourages students to do a selective study and leave large chunks of subject matter unstudied. This practice of offering an option also reduces the validity of the test.

IX. DISTRIBUTION OF MARKS: The teacher should decide the number of marks of different sections, questions and part of questions. Here the difficulty level of a question will form a basis for allotting marks to a question.

X. DIRECTIONS: These should be clear, unambiguous and specific so as to improve the reliability of the paper as a whole.

XI. MODEL ANSWERS AND SCHEME OF MARKING: Model answers should be prepared in advance so as to avoid uncertainty or disagreement among competent examiners over the correct answers.

As mentioned earlier, this practice will check the setting of questions which are not definite, specific or clear even to the examiners. The teacher should also prepare a detailed marking scheme. These two measures will help improve the objectivity and reliability of marking student answers by the examiners. It is desirable that these answers are discussed by a committee of papersetters before the question papers are finalised.

Evaluation of the Course

TEACHER RATING AND COURSE EVALUATION BY

STUDENTS : The best way to evaluate a course is to answer the question: did the course accomplish its objectives? Since these objectives are modifications of the student behaviour in the referent situation, only a referent situation test is the proper tool to collect relevant information for evaluation of the course. This can be done by administering tests and questionnaires six months or a year later.

The course-end reactions of the students are, however, the next best indicators of success since they provide valuable information from the participants. The rating scales given below can be administered to students periodically and at the end of the course; to obtain immediate feedback for improving instructional procedures and teacher behaviour, the teacher should explain the purpose of the questionnaire to the students. Also, students should be told that their answers are not to be used for grading. They should be asked not to put their names on the questionnaires.

Early studies have demonstrated that student ratings of instruction are quite stable and reliable, do not vary significantly between alumni and current students, are hardly influenced by the grade of individual students, and when studied by teachers, have helped them to improve their teaching and consequently their rating by students. Yet another finding suggests that "certain teachers are likely to be more successful with classes of high ability level students, and that other teachers are like to be more successful with lower ability level students—viewed both in light of student ratings and student achievement". (Remmers, 1954). Thus rating as a method not only contributes to the study of the dynamics of learning situations but also contributes suggestions and supportive evidence for corrective practices in these situations.

Although rating scales are imperfect and do not provide all the answers that might be desired, they do provide a teacher who wishes it an appraisal of his effectiveness as seen by his students.

In view of the above, it is suggested that the rating scales might be used to obtain student ratings on teacher and course characteristics. Besides, the teacher may also obtain through his personal observations of non-verbal behaviour of students in the class such eye movements, nodding, etc.

(a) TEACHER RATING BY STUDENTS: Although a number of characteristics of teachers have been studied, some of the most important aspects used to measure the classroom characteristics of teachers are given below. The individual teacher might use the same or adopt it.

1. Is interested in subject				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	2	3	4	5
2. Possesses sympathetic attitude towards students				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	2	3	4	5
3. Is fair in marking				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	2	3	4	5
4. Is open-minded				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	2	3	4	5
5. His ability to present subject matter				
Very good	Good	Neutral	Poor	Very Poor
1	2	3	4	5
6. Enjoys teaching				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	2	3	4	5
7. His command over subject matter				
Very Good	Good	Neutral	Poor	Very Poor
1	2	3	4	5
8. Stimulates intellectual curiosity				

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	2	3	4	5
9. His personal appearance				
Very Good	Good	Neutral	Poor	Very Poor
1	2	3	4	5
10. What grade would you give this instructor,				
Outstanding	Above average	Average	Below average	Ineffective
1	2	3	4	5

11. What did you like best in your teacher?

12. What did you dislike in your teacher?

Evaluation of Course by Students

(Check the one that is applicable)

1. Organisation of the course:

- Well organised
- Adequate but could do better
- Confused and unsystematic

2. Organisation of daily class Work:

- Always well organised
- Sometimes organised
- No organisation at all

3. Number of assignments

- Excessive
- Sufficient
- Meagre

4. Laboratory facilities

- Adequate
- Inadequate
- Meagre

5. Provision of reading material

- Very Good
- Satisfactory
- Unsatisfactory

6. Opportunity for interaction with instructor

- Plenty of opportunity
- Occasional opportunity
- Rare or no opportunity

7. The course is

- Relevant to my personal problems
- Relevant to my major field
- Not relevant at all

8. Coverage of course content

- Excessive
- Adequate
- Very little

9. Course objectives are

- Reflected in the exams
- Sometimes reflected in the exams
- Not reflected in the exams

10. What did you like in this course?

11. What did you dislike in the course?

12. What changes in course procedures would you suggest ?

Interpretation and use of information**(a) STUDENT ACHIEVEMENT TEST**

Information about entry skills and abilities of the students is necessary for two reasons. First, it verifies the assumption on which the course is designed, viz. whether students have accomplished their learning objectives which are the prerequisites of this course. Second, it provides a base line of information for assessing the adequacy of instruction. For example, it is possible to trace it either to poor instruction or inadequate student preparation.

The information can be further analysed to provide answers to three question: how many students have achieved the prerequisite learning objectives? Which students have not achieved the prerequisite entry objectives?

Table 4
Procedure for Weighting and Scoring Objectives

Objective	Weighting (in percent)	Student(s)				
		S-1	S-2	S-3	S-4	S-5
Knowledge	64*	64	40	20	64	64
Application	28	28	10	16	00	00
Skill	8	00	8	00	8	00
Total	100	92	58	36	72	64

*Figures indicate percentage of marks.

Which particular entry skills and abilities does a student lack? (See Table 4). This information helps in modification of instructional plans. If many entering students do not possess course entry requirements, one or more of the following courses should be adopted by the teacher. Thus, if the students have already learned but forgotten the entry skills, the teacher should conduct a review before starting the course. If the students have not previously learned some units, special remedial instruction should be prepared for training. If limited time is available, some objectives and their corresponding contents may be omitted. The last option open to the teacher is to admit only those students who achieved the entry objectives. The information about the student achievement during the course should also be interpreted and used in the same manner as described above.

If more than one examiners are assessing the answer scripts, steps should be taken to standardise the marks given by different examiners to make the respective marks comparable.

(b) TEACHER RATING BY STUDENTS

After the student ratings of teacher behaviour and the course are obtained, and teacher should summarise and put the same before the class for discussion so that some concrete suggestions for improvement of instructions will emerge. The teacher should prepare action plans on the basis of these suggestions and implement them. This exercise should be carried out two or three times in a year so as to provide direction to teaching and learning process.

Summary

This module introduces a plan of monitoring and evaluation, of course, designed to improve instruction and student learning at the college level. The procedures for implementation of this plan are described in detail so that the desired objective is accomplished.

Measuring Academic Achievement

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In the past planners have used general statistical indicators of educational needs in making decisions about resource allocation. Recently in developed countries attention has turned to the use of assessments of student attainment in defining system output and future needs. In this chapter we look at measures of student educational outcomes in the developing nations. We will define two general types of assessment and review the current state of educational assessment in developing countries—the characteristics of national examinations, the examination reform movement, and the growth of standardized testing in developing countries. The second part of the chapter focusses on decisions and problems confronting education ministers instituting standardized testing programmes.

Maximum and Typical Programmes

Educators have traditionally thought of learning outcomes as occurring in three broad categories:

Cognitive learning is the process by which we come to understand and organize the world as we perceive it. Cognitive skills are abilities such as acquiring knowledge, understanding phenomena, solving problems, creating new forms and ideas, and communicating effectively.

Affective learning involves the growth and maturation of aspects

of the personality such as character and temperament. Many of the characteristics labelled "affective" in education are partly cognitive in nature—a pure affective characteristics might be a mood or temporary emotional state. More lasting characteristics such as values or attitudes are largely cognitive, have important affective consequences.

Psycho-motor or perceptual motor learning is a crucial dimension of child development before age seven. This aspect of learning encompasses skills such as balance, left-right discrimination, hand-eye coordination, ability, endurance, flexibility, strength, relaxation, perception of body image.

However, the more we learn about learning and development, the more these categories seem to overlap abilities in each category are strongly interrelated. Certainly skills in each domain affect the development of faculties in the others. Much recent investigation has emphasized the mediating mechanisms in learning which have both cognitive and non-cognitive components. These include motivation to achieve, expectancy of success, self-esteem, cognitive style, and inhibitors such as anxiety. These characteristics are both inputs and outcomes of education and have a profound effect on achievement.

A useful classification of outcomes from an assessment perspective distinguishes between capacity measures and those bearing on expected performance. One type of assessment is measurement of what a student can do—the maximum behaviour or ability. This type of measurement may be concerned with what a student can learn (aptitude testing) or with the expression of that capacity in what a student has learned (achievement testing).

The second general type of assessment is the determination of characteristics which affect what a student will do—the typical behaviour that can be expected. Appraisal of personality characteristics and their mediating mechanisms fall into this category. Current educational measurement research approaches summative and predictive assessment as a combination of aptitude/achievement testing and some optimal group of second type of measures.

Current Examination Practices and their Modernization

Educational policy-makers in developing nations are now examining existing assessment practice in the light of national goals, as well as the current state of the art of testing. A corresponding inquiry into

the connections between curriculum assessment and educational objective—relationships long neglected—is gathering momentum. Worldwide, there has been a surge of interest in the reform of examination practices inherited from European traditions. The national external examination on the English or French model is now seen in many developing countries as largely irrelevant to present national needs and realities.

The external examination is often a written essay or oral test based largely on the recitation of memorized material. It evolved in post renaissance Europe as a mechanism of control over the schools by subsidizing agencies (church or state) and was exported to the developing world with the European educational structure. Today the external examination is still designed and controlled by agencies outside the school and often beyond the influence of teachers or administrators. Typically the examinations have tended to function quite independently of educational policies guiding the schools. Yet because they determine admission to higher education, the examinations exert an enormous sway over teaching. However, studies have discounted the validity of European external examinations as selection devices, noting variations in scoring and level of difficulty. These external school-leaving examinations are under special scrutiny in developing nations where they often control the content of instruction, dominate the attention of students and teachers, and cause widespread anxiety and frustration.

The need for basic changes is clear. The traditional examination does not produce comparable and replicable data about what students know and do not know. It does not assess achievement, but measures linguistic fluency and certain elusive intellectual qualities associated with a humanistic and classical education. The continued emphasis on these European classical traditions in the developing countries may lead to an impractical and irrelevant educational experience.

Even when national examinations are revised, as they have been in the last decade in many countries, usually they are not subjected to the rigorous analysis required to ensure validity. A case in point is the Ethiopian School Leaving Certificate Examination (ESLCE) which has been given to students in the last year of academic secondary school for the last 19 years. The ESLCE is prepared and scored by subject matter specialists associated with the public schools, the Ministry of Education and Haile Sellassie I University. A candidate who takes the ESLCE is successful if he attains five passes at C level,

including the Amharic language examination, the English language examination, and the mathematics examination. There is no limit to the number of times a candidate can take the ESLCE, and the time allocated for each examination varies.

The ESLCE has long been controversial. The percentage of those passing the exam from 89 per cent in 1950 to 20 per cent in 1966, causing widespread public dissatisfaction and disputes between teachers and examination officials over the cause of the high failure rate. In 1967, a number of commissions were set up to examine the content of examinations and the high school curriculum. Participants declared that contributing to the failure rate were promotion of students without adequate skills from the lower grades, poor instruction by high school teachers and inadequate student preparation for the examination. Teachers claimed they had ambiguous questions, limited coverage of subject matter, and allowed too little time for answering questions.

At the conclusion of a five-day session, the commissions recommended enrichment of the curriculum and revisions of the ESLCE, including the substitution of objective test items for some easy questions. But no significant reduction has been made in the number of failures, which varied between 83 per cent and 74 per cent between 1969 and 1973.

The issue to be addressed is whether the revised ESLCE is valid (does it accurately test the knowledge, skills, and understanding that high school graduates should have) and reliable (are the results consistent).

Preliminary findings have indicated that the predictive validity of the ESLCE for university performance has been modest and the reliability of the test has never been established. Yet the examination is used as the yardstick for determining "successful" completion of secondary school.

Standardized Testing: One Direction of Reform

The widespread examination reform movement, stimulated by extensive unhappiness with existing examination practices, will have a great effect on future collection of data on educational outcomes. Proposed solutions range from the abolition of all exams to the substitution of a standardized tests. Some educators are seeking to develop new essay-type examinations with shorter questions to provide a better sampling of subject matter. The major trend, however, is

toward objective standardized testing, which is repeatable for various populations at different times because the test content (though not the exact items), procedure, and scoring are fixed.

A few examples illustrate the trend towards standardized tests in developing nations:

Singapore's Ministry of Education, working with the Cambridge Overseas Examination Syndicate, instituted standardized testing programmes at the end of the sixth year of primary school, the fourth year of secondary school, and the second year of post-secondary school. The primary school leaving examination covers two languages (choices include English, Chinese, Malay or Tamil), mathematics and science.

In Vietnam, the Ministry of Education, Culture and Youth abolished the eleventh grade baccalaureate in 1973. The ministry is now designing standardized tests, to be administered to high school students completing the twelfth grade in 1974. These tests will replace the twelfth grade baccalaureate.

The Philippines, through a private Philippine organisation, administered a standardized college entrance examination (CET) on a voluntary basis two years ago. The testing organization has now contracted with the government to develop a national college entrance examination (NCEE) for admission to all post-secondary schools. The NCEE will have two parts: a subject proficiency section measuring English, mathematics and science and a mental ability section consisting of tests in verbal analysis, number and letter series, word-number relations and abstract reasoning.

Indonesia provides an interesting example of testing reform resulting in both localization of control and national data gathering. In the 1950s education officials concluded that the current examinations and curriculum were unsuitable for a democratic educational system: the uniform curricula did not reflect the cultural and geographic diversity of Indonesia, and the harsh external examinations were not functional for selection. The government abolished external examinations, following a nationwide upgrading of teacher skills in testing and evaluation, and decentralized the examination organization. After 1969 all examinations were produced either by teachers or, in some parts of the country, by provincial committees. Beginning in 1973 each school developed its own examinations.

At the same time the ministry developed a standardized testing programme for educational planning purposes. These tests will be given to all children in grades one through 12, and cover mathematics,

science, social science, and Indonesian languages. The questions are short answer and include the cognitive areas of knowledge, comprehension, and application. Two functions of testing are, thus clearly separated: the evaluative and guidance function for students and teachers, and the assessment of education outcomes for educational planners.

Measuring Educational Outcomes with Standardized Tests

The necessity for assessment of educational needs and outcomes is common to all countries. But developing countries have a smaller margin for experimentation in the allocation of investments in education is greatest that the data base for decision making is least complete and accurate.

Planners must be able to weigh the relative merits of programme investments with regard to quantitative increase in education, needed changes in teacher recruitment and training, needed changes in curriculum, and the diversification of the institutional role of education in national life. Viable planning in these areas requires measurements of the numbers of people to reach each level of education annually, the availability of resources for educational development, and the abilities of individuals inside and outside the formal educational system.

It is the third type of measurement that is most deficient and it is this type of data which standardized testing can supply. Specific data on the acquired skills and educational defects of demographically differentiated groups of students can be collected on a continuing basis for programme analysis and planning. Furthermore basic skills of large numbers of people outside the formal system—adults and youth who never entered a school or who dropped out—can be assessed for vocational placement or by allowing them to re-enter formal schooling at the proper level. Finally, standardized testing is appropriate for certain types of non-formal programmes. If technical skills are taught in diverse ways certificate of programme completion may have little meaning in the market place. Although practical tests will continue to be important, a well designed and validated standardized test can assess large number of applicants economically.

Implementation of standardized testing is a sizeable task. The education Minister or official must first decide whether to use an existing test—published in another country or by the International Association for the Evaluation of Education (IEA)—or design a new test for that country alone or cooperatively with other countries. Test

construction is a considerable undertaking; it is costly and requires specialised expertise and time for development. For this reason the use of existing tests is a serious option to be considered. However, the investment in test development may well be justified for long-term planning and educational benefits. Countries need testing instruments designed in the context of their particular social needs and problems. Both options will be examined.

Use of Existing Tests

Tests developed in other countries are rarely appropriate for use in developing countries without adaptation. Even where the language of the test is a desired feature some reading level adjustment may be needed. An exception might be the International Educational Assessment (IEA) instruments, which were designed for cross-national use and have been administered in some developing nations. The advantage of the IEA tests is that they were painstakingly constructed and extensively validated. But it must be remembered that the International Assessment effort was initiated to analyze across nations the effects of various in-school and out-of-school variables on learning. The research orientation of these tests on International comparisons may not coincide with the outcome information needs of a country.

The advantages of adaptation of existing tests are economy and the relative speed of the process, compared to test construction. Furthermore a standardized test has little value if it has not gone through the processes of standardization and validation. These procedures may present great problems to developing countries in terms of knowledgeable personnel, data processing systems and financial support, and hence use of existing, previously validated tests may offer a solution to these problems.

However, the problems with adaptation may outweigh the initial convenience and economy. There are several basic considerations in test adaptation: language, content, mechanics, and rationale.

Translation is self-explanatory task but it may pose difficulties if the test contains vernacular phrases or proverbs.

Content adjustments are routinely made by test adapters on a superficial level (for example, changing monetary or measurement systems), but other issues of content are often ignored. The accuracy of a test is greater if the applicants are familiar with the examples and illustrations used. In a vocational aptitude test a common error

has been to assume that an item measuring a certain type of mechanical aptitude must be presented in terms of the Western machine or tool, rather than a more familiar tool from the local environment. But the test is intended to measure the target skill and knowledge of the machine to be used on the job.

Testing mechanics must be modified by the test administrator according to circumstances. Test-taking is a skill improved by practice and familiarity. A separate answer sheet sometimes causes confusion for groups unaccustomed to standardized tests. Another element is timing; cross-cultural research shows that people have very different senses of timing. The time limit prescribed by a standardized test may have to be extended or eliminated to be fair to some groups of subjects. The instruction to "work as quickly and as accurately as you can" involves a complex type of judgement which is particularly alien to many cultures.

The test rationale deserves careful consideration. Every test is designed within a particular cultural context is usually validated against practical criteria in that particular culture. The consequences of translating the test to another culture can be evaluated only in terms of the purpose of the test. Poor language facility, slow work habits and lack of abstract thinking will affect test scores, but may also affect the criterion behaviour which the test was designed to measure (for example, in a vocational aptitude test). In other cases this is not necessarily true.

To summarize, there are at least six levels of adjustment necessary for adaptation of instructional materials:

- Translation
- vocabulary changes for the proper reading level
- illustration and photograph substitutions, to reflect local conditions,
- adjustment in procedures—implied or specified—to match the expectations and experience of the learners
- content adjustment to reflect local culture and life style, and
- accommodation to the learning styles of the students.

The last three are complex and require intimate knowledge of the culture. These considerations underline the necessity for nation to acquire training psychometricians with the technical and cultural requisites for analysing and designing test modifications for the functional requirements of the educational system.

The Haile Sallassie I University Testing Centre in Ethiopia has had extensive experience in using and adapting tests such as the Differential Aptitude Test, the Davis Reading Test, and the Amharic Otis 100 (adapted from the Otis Quick Scoring Mental Ability Test).

Some of the conclusions drawn from the experiences of the Testing Centre in assessing educational outcomes with adapted measures are:

1) The studies conducted demonstrated that cultural factors greatly affect the ability of test items to elicit the intended responses. Comprehensible test items must be constructed in the light of the examinee's cultural background.

2) Since lack of familiarity with the procedures and types of tests poses a threat to the validity of the instrument and reliability of the results, it is essential that adequate information about tests be given to examinees ahead of time.

3) The indiscriminate use of standardized tests from developed nations is likely to be loaded with sampling error due to differences in the populations.

4) Validation (the process of ensuring accuracy) for the criterion behaviour toward which the test is directed must be undertaken in the adapting country. Before tests are used as predictors of success for the desired criterion, a scientifically designed pilot must precede to verify that the tests actually predict the intended performance of the individual. This aspect of test development needs greater emphasis for better validity and reliability of the test results.

Development of a New Test

Designing new standardized tests rather than adapting tests from other nations has several distinct advantages:

1. The effect of cultural influences on test performance may be pronounced. An adapted test may not be suited to the population because of built-in assumptions about cognitive skills, familiarity with contents or phenomena, or cognitive style, necessary revision in test mechanics and administration may be extensive.

2. A new test can be designed specifically for the curriculum and educational objectives of the formal school system. Tailor-made tests are essential for assessment of many objectives in non-formal programmes.

3. The test can be designed to supply the particular kinds of outcome data for the particular populations (grade levels) required by planners.

4. The process of test development is an opportunity to increase levels of awareness and expertise with educational measurement among teachers, administrators and educational researchers.

The high cost of test development can be minimized by a regional pooling of financial and manpower resources among several geographically and culturally related countries. Measurement experts, teachers, educational psychologists, anthropologists, and educational planners working together in a centralized research laboratory can generate common examinations and specialized tests for the participating countries. The West African Examinations Council is an example of such an arrangement.

If a central problem is the lack of measurement specialists in a country or region, a solution is to bring testing experts from abroad to coordinate the test development project. The contract with the consulting organization can specify training in measurement and test design for personnel in the Ministry of Education and Workshops for local administrators and teachers in measurement, test item writing and evaluation. It has proved important, in the developed countries, to have teachers involved in some phase of test design to promote supporting attitude toward the procedure and rationale of standardized testing.

Implementing, A Testing Program

In this section we examine, step-by-step, the basic decision areas facing an Education Minister or regional policy group engaged in implementing a testing programme. These include: 1) defining the purpose of the test; 2) determining grade level and timing of test administration; 3) choosing norm referenced or criterion-referenced instruments, 5) defining the basic educational objectives and content to be covered; and 6) test construction and validation.

Defining the Purpose of the Test

The reason for giving a standardized test must be clearly understood by test administrators, school personnel, and the students. In countries where such testing is common, dissatisfaction sometimes results from imprecise definition of the goals of the test which, in turn, determine the appropriate methodology, the analysis of the data, and the fairness of the practical consequences. A test which is designed for one purpose is usually inappropriate and often unfair when used for a different

purpose.

Educational measurement provides either needs assessment or treatment adequacy assessment data. Needs assessment is identifying the specific goals towards which education should be directed. Sometimes needs assessment is used to identify specific learner needs in terms of understood goals for prescriptive or placement purposes. Treatment adequacy assessment refers to evaluation of the educational process; it is either formative (on-going testing during the instructional programme) or summative (takes place at the end of the programme to judge its success). These three types of testing yield antecedent, formative, and outcome data, in some cases tests at an intermediate level may be used both as a summative evaluation of a completed programme and for needs assessment for treatment planning for the next level. But in principle the purposes are distinct and ideally the tests to serve each should be tailored to the purpose.

Some specific uses for outcome measurement are noted below:

- Students and teachers—diagnosis of the learner's strengths and weaknesses for individual guidance and valuation of student progress;
- administrators—evaluation of educational programs, selection of students for the next level of education, distribution of students in different types of programmes;
- employers—certification of competence in required skills and knowledge;
- educational planners—evaluation of the quality, efficiency and adequacy of the educational system as a whole; and
- educational research—contributions to the development of educational learning theory

Although one test can serve more than one function (for example data on individual student achievement for students and teachers as well as gross data on achievement for national planners), it must be carefully designed to do so. Tests cannot accomplish many goals indiscriminately; they must be designed for specific purposes in the context of the particular situation and goals of a country. This constitutes one of the difficulties of transplanting tests designed for other countries.

Grade Level and Timing of Tests

An early decision that must be made is which grades are to be tested

and with what frequency. A logical schedule is testing at the end of each stage: lower and upper primary, intermediate, and secondary. Another most costly plan is to test every other grade beginning in the second grade. This may be appropriate where elementary grades are grouped in units of two grades each, as in the Arab states. On the other hand, testing too often—for example, at the end of each school year for admission to the next grade—can have damaging effects on students. Again, the certification and system evaluation functions of testing must be kept clearly differentiated.

Yearly testing for admission to the next grade is expensive, may cause extensive anxiety, and has a low predictive value for young children who develop cognitive capacity at different rates. The lock step approach to instruction and individual assessment handicaps children who develop more slowly—a child should not be labelled a failure after only one or two years of school. In the early years of schooling it is important to balance standardized tests with more subjective teacher evaluations. At this stage standardized tests are more useful for group assessment than for individual assessment.

Aptitude and Achievement Testing

Educators developing a new system of assessment to replace the traditional examination have a choice between aptitude testing; a combination of aptitude and achievement testing; and achievement testing alone. This choice is affected by the potential uses of the test. Our primary concern in this report is the group assesment of all incremental gains by students—what might be called the value-added concept in measurement. This clearly required achievement testing on a regular basis so that longitudinal data can be collected.

However, planners in some countries may wish to complement standardized testing not merely for planning purpose but also for purposes of selection for high levels of education. Combining two functions of assessment for planning purposes and for selection—cannot be taken lightly since the former implies achievement testing and the latter has in the past implied aptitude testing. A brief review of the advantages and disadvantages of the options listed above in the light of both these functions follow:

Aptitude testing attempts to measure innate ability; it has been favoured for predicting future performance. A few key areas (such as verbal and mathematical ability) can be emphasized and therefore

the aptitude test may be economical than an achievement test. The aptitude test also theoretically circumvents problems and unequal quality and differing curricula in schools and consequent unequal academic achievement of students.

The disadvantages of aptitude testing are two-fold. First, it does not yield systematic data for national evaluation and planning. Second, it is extremely difficult to design a scholastic aptitude test that does not to some degree measure achievement or environmental characteristics. Indeed general aptitude or I.Q. tests purporting to measure intelligence, or basic ability to learn, have been the subject of much controversy for decades. Factors such as socio-economic status (and hence greater opportunity to learn) are so highly correlated with intelligence test scores that the tests have acquired some disrepute, especially in a cross-cultural context. The obvious deficiencies of some intelligence tests spurred an effort to create "culture fair" tests which substitute abstract concepts for universal pictorial symbols for culturally-linked content. However, further research revealed that even geometric shapes are perceived differently in different cultures. It is now felt that after eliminating all culturally-differentiating material the remaining content may be too trivial to be valid for any practical criterion.

Specific scholastic aptitude tests are based on the theory that mastery of a specific skill results not from generalised ability but from particular abilities which can be isolated. These mental abilities, or traits, were identified by factor analysis of responses to test items by large number of people. Scholastic aptitude tests are discrete tests generated from the clusters of related items resulting from the factor analysis (there are also non-scholastic aptitude tests which are widely used; skill tests for abilities such as hand-eye coordination, and vocational aptitude tests simulating particular job skills).

Some researchers objected to this model, in which the mind consists of independent constituents which can be separately measured, proposing an alternate model of the mind as an organic structure of complex interrelationships. They maintain that specific cognitive abilities, such as performing mathematical operations, consists mainly of the command of the knowledge pertaining to the process and that general ability is primarily clusters of closely related specific abilities. Therefore, much of what has been seen as innate ability would actually be attributable to previous learning experiences.

The validity and usefulness of the mental trait theory to explain

individual differences in learning is yet to be resolved. Aptitude tests have diagnostic function—they can be used to prescribe appropriate learning environments for individual students (for example, programmed instruction, lecture method or unstructured environment). But it seems clear that most aptitude tests to some extent measure achievement or environment.

Combining aptitude and achievement testing has been proposed by Krug and Schwarz who argue for secondary school selection in developing nations by means of a two-tiered process. First, an achievement test would screen out students who had not mastered skills necessary for success in the secondary course; then a scholastic aptitude test would be used as the predictive instrument to identify the best candidates for secondary school. The rationale is based on the assumption that the past schooling countries, and hence achievement alone is an inequitable criterion.

This proposal does guarantee that students selected for secondary school would possess the requisite skills for progress, but the use of an aptitude test as the ultimate predictor has the major drawback that it is difficult to design a "pure" scholastic aptitude test not actually measuring achievement. There is no way to know to what degree aptitude testing used in limiting educational opportunities may unfairly handicap a population.

It appears that the only way to assure fairness and gain detailed outcome data on educational outcomes would be to implement both aptitude and achievement testing programmes simultaneously, which is not an economical procedure.

Achievement testing is a straightforward measure of educational outcomes. For students and teachers such tests provide feedback information on progress and problem areas; for administrators, they also allow comparative evaluations of programmes or schools within a region. For the national planner, whose problem is to conduct educational assessment that will evaluate the effectiveness of the entire system, achievement testing is the logical tool. Aptitude tests, which are more selective in content and are based on the premise of prediction rather than of assessment, clearly will not satisfy the needs of planners or administrators for system evaluation. Achievement tests appear to have the capacity to perform both functions. Valid and relevant assessment requires tests based on educational objectives, with adequate coverage. Coverage must concern itself not merely with sufficient sampling of curricula but with expected and desired

behaviour in terms of national goals; otherwise objective assessment is open to the criticism of trivializing the aims of education.

The difficulties imposed by differing curricula and quality of school instruction may be partially overcome by some recent technical developments in test construction, particularly the criterion-referenced test discussed below.

Selection of Instruments

Most standardized tests in use today are norm-referenced; they are designed to show how an individual scores in relation to others taking the same test. This test has been used widely in competitive situations.

In recent years testing experts have developed the criterion-referenced test (or domain-referenced test), designed to measure a student's ability to perform a particular skill or mastery of a concept. The significance of the criterion-referenced test is that it is informative about the breadth of measured knowledge but less informative in comparing individuals. Statistical considerations, as well as content validity, influence the inclusion of test items in the norm-referenced test, so that variability in scores will result. Criterion-referenced tests are constructed around specific learner objectives and could reveal that all of the students mastered the objectives or at the other extreme, that no one mastered the curriculum content sought. But if desired the criterion-referenced test can be designed to produce the kind of variability or ranking of individuals, given by a norm-referenced test.

For nearly every function of testing criterion-referenced tests provide better information. Where the emphasis is on assessment of educational quality, they are clearly superior—although typically more expensive to produce than non-referenced tests. Work is now proceeding on the technical problems of criterion-referencing. As models for these tests become more readily available they will become more economical and more applicable for selection. A test designed to assess mastery of skills needed to succeed in secondary school would be a better predictor of academic success in secondary school than a norm-referenced test based on the elementary school curriculum. The latter is more likely to yield misleading estimates of performance and to reflect existing social status in selection. Following a criterion-referenced screening test candidates could be selected from a pool of qualified candidates according to other criteria (geographic for example), resulting in great access to education for non-privileged students.

In most cases a carefully and administered standardized achievement test, possibly combined with other methods of evaluation, will probably be the best way to select students for further schooling.

Defining Objectives and Test Content

One reason for caution in adapting existing instruments has already been discussed: a good test, like an effective curriculum, reflects the values and educational objectives of the society in which it is given. Ultimately the aims of a society are the basis for evaluation of the educational system.

Objectives-based assessment entails close analysis of the cognitive skills implied by educational goals. There are three very general types of goals. Students must acquire the necessary knowledge and skills to a) live happily and successfully; b) fill social roles, including the nation's manpower goals; and c) preserve and develop the traditions and values of the society and humanity at large. The elaboration of these goals into specific skills and knowledge is the foundation of curriculum and evaluation design.

More specifically, Benjamin Bloom has classified educational objectives in the cognitive domain in a hierarchical taxonomy with six ascending levels:

1. knowledge of facts, concepts, generalizations and methods;
2. comprehension, interpretation and extrapolation of information;
3. application of principles;
4. analysis of material, recognizing relations and organizations;
5. synthesis of parts to produce a new communication; and
6. evaluation or judgement.

A taxonomy of this type can help ensure that tests incorporate the higher orders of cognitive learning and not merely the lowest level of repetition of facts. Interpretation and reporting of test scores determine the degree to which programme evaluation is possible. Tests should report a separate score for each objective rather than an average score.

Evaluation has a feedback effect on the instructional process. If examinations determine acceptance to higher levels of education, they tend to control the content of curriculum. It is counterproductive to promote national priorities in curriculum while neglecting the

relationship between the content of examinations and national goals.

Test Construction

The construction of a standardized test involves many procedures including:

1. Writing to test specification a complete and explicit listing of all characteristics of the test. This means resolving all questions of test content, length, difficulty and scoring. All the important decisions about the purpose of the test and the educational objectives which it covers must be made at this initial stage.

2. Writing the test items—subject matter experts and test technicians often work collaboratively to write items within the framework of the specified values and objectives.

3. Pretesting the items—gathering and analysing data on a sample response to the items.

4. Designing preliminary test forms

5. Pretesting the preliminary test forms for reliability, difficulty, time limits and so forth.

6. Designing the final test forms

7. Administering the test to standardize and validate it

8. Preparing a test manual and other materials

9. Printing, publication and copyright

Test accuracy is of vital importance in test construction. A basic question about tests is what they really measure. Good test instruments have three qualities: validity, reliability, and usability. The most important quality is validity, the extent to which the test measures what it is supposed to measure. It can be determined by statistical comparison of the measurements to some outside criterion, or by other means. If no convenient and measurable criterion is available, expert opinions may be used, which obviously introduces an element of subjectivity.

Content validity, important for achievement tests, is the extent to which the test includes a representative sample of the universe of content and objectives for the area being measured. The author of a national achievement test must attain content validity for varying curricula, complicating the task of achieving a close fit between instructional material and the test. An item by item analysis is necessary, either in designing or adapting an achievement test.

Construct validity is important for tests in the social/emotional

domain. A construct is an abstraction—a conception underlying a test reflecting an intangible attribute—for example, anxiety. Anxiety as a construct cannot be observed directly. It's presence is inferred on the basis of certain observable events—for examples, increased heart rate, palms sweating and so forth. Consequently a test of anxiety may be said to possess construct validity to the extent that high or low scores in it predict some observable behaviour or even which on logical or theoretical grounds might be expected to be a consequence of the test-measured state.

Concurrent validity is established by relating the test to a more established measure of the same attribute administered at approximately the same setting.

It is important to remember that no test is universally valid; it is valid for a particular time and circumstance.

Reliability refers to the consistency of measurement. All things equal, the score of a person on a test today should be the same as his score at some subsequent date, if no circumstances have intervened which markedly affect the score (for example, intensive study of questions missed or severe physical or emotional trauma). High reliability is essential if there is to be confidence in test scores.

Reliability is generally assessed in one of several ways; through the test-retest method in which a test is administered on successive occasions following an interval of time; using comparable split-halves of the test administered at the same time; or on the basis of an analysis of the interval consistency of test items. Correlational and other techniques for computing reliability coefficients are widely available.

Usability pertains to administrability, scorability, economy, format and the adequacy of norms. Determining usability is in the domain of the policy-maker as well as the testing expert.

Some of the processes involved in test construction in a developing country are illustrated by the Ethiopian Oral Amharic Proficiency Test. The Haile Sellassie I University Test Center in Ethiopia has experimented with construction of new instruments as well as adaptation of existing ones. The Oral Amharic Proficiency Test, a test of proficiency in listening and understanding of spoken Amharic, was developed in the 1967-68 academic year. The items consisted of common sayings, word usages, word meanings, commonsense interpretation of statements, and so forth. Each item has three possible answers: True or False or neither True nor False. Some sample items are: "the best way to get from one side of the road to the other is to take a taxi",

"a window and a door do not mean the same thing"; and "if two individuals are equal in height then they are also equal in weight".

Out of pool of 500 items, only 127 items were used in the final test. The rest were dropped because of item difficulty, ambiguity, cultural bias, and so forth, which became evident after repeated administration of the test to different groups.

The correlation between the oral Amharic scores and first and second semester grades ranged from 0.36 to 0.49. If taken as evidence of oral ability (for which the test was designed), the above figures are encouragingly high; its purpose was to measure proficiency in comprehension at an elementary level.

The following are some of the problems that were encountered in the development of the oral Amharic test: 1) insincerity of some trial examinees;) reluctance of essential faculty reviewers to make "critical" comments; 3) avoidance of culturally based items; 4) construction of simple clearcut statements which are either true or false or neither true nor false;and 5) identification of difficult and/or ambiguous items.

Conclusion

The use of standardized testing programmes to provide systematic data on the outcomes of schooling is a relatively new concept, but one that will be increasingly important in-system-wise planning. Objective standardized tests have potential value for facilitating educational decision making on a national level. Measuring the effects of instruction is far from an exact science, but it can yield direct information on the quality of efficiency of formal and non-formal educational systems.

The task ahead for planners is to encourage the development of indigenous expertise in test construction and administration by establishing national or regional programmes of test development. These programmes already ongoing in some areas, may well prove to be cost-effective. Traditional examinations often are not adequate for either planning or selection purposes in the expanding educational systems of developing countries; and the limitations of adapted tests may soon make them unacceptable to nationally oriented educators.

Competitive Public Examinations in a "Pluralistic" Society

JACOB THARU

Public examinations are almost by definition intended to serve certain administrative and social purposes. The design of the instrument (question paper) and the interpretation of the results are based on certain convenient assumptions about the nature of the ability in question, its distribution in the population, the content validity of the items included etc. Given that any particular 'batch' of candidates taking a public examination come from a variety of socio-economic and cultural backgrounds and have variety of learning histories in different types of institutions, we cannot lightly take for granted the appropriateness and fairness of that examination.

In these notes I shall raise some questions about the assumptions underlying public examinations. Though the points I raise have 'consequences' in the psychometric sphere, my focus is on the pedagogic and social issues. The teacher, the administrator and the citizen (none of whom is a measurement expert, fortunately!) must be aware of these issues and take responsibility, knowingly, for the related assumptions.

Factors affecting the soundness of achievement tests

For any ability test, whatever the domain, the test constructor's technical goal may be stated thus; it is to measure as truly as possible the abilities stated in the test blueprint. I use the term true rather than accurate to keep in focus the qualitative nature of the errors that

reduce accuracy.

The examination system that we have is the source of a large number of errors or distortions. These system-based sources of errors have been the focus of many empirical studies. Perhaps the most comprehensive review of these studies is found in *Research on Examination in India* by Harper and Misra.

From the perspective I am trying to develop here, such studies have certain limitations. There are three specific problem areas I would like to mention.

The test is assumed to be equally valid for all the diverse sub-groups that constitute the population of examinees. Secondly, the individual student as a real agent actively involved in the process of preparing for and taking a test has no worthwhile status. The examinee himself is merely a label tagged on to his obtained score. Even studies dealing with the effects of chance consider 'abstract students' representing types rather than actual instances.

An immediate consequence of suggesting that individual factors in addition to system-based factors should be considered, is to try and apply more closely the principles of psychological testing. Where does this get us? We aim to measure the 'ability' as purely as possible. All other sources of variation—attitudes and emotional reactions operating in test situations, health, fatigue, motivation, level of practice, fluctuations in attentions and memory—are sources of error. The goal is to make a test free from the influence of these factors. Here again the individual is seen only in terms of what is measurable about him, and the features that go into his individuality are not valued. On the contrary they are to be eliminated in the quest for accuracy via reliability.

This brings me to a third problem in relation to the model which governs our study of reliability. Principles such as the unidimensionality of the trait being measured, the normality of the distribution of scores, the randomness of errors of measurements, etc., are involved. What is applicable to general intelligence in a natural population may not be equally sound to the arbitrarily but not randomly selected subgroups (from different schools) constituting the population of examinees for any major examination.

To return to my main theme, if we are going to accommodate sociological factors in a discussion of examinations, then the examinee's identity is important. In studying how well a test works, the individual and his goal directed behaviour (performance) that led

to his obtained score, rather than the score itself becomes the primary datum. Further the educational context in which we locate an achievement (as opposed to a proficiency) test also demands a recognition of the learner's real rather than national existence.

First in his book *Constructing Evaluation Instruments* represents the process of education by a triangle. This serves to emphasize the interrelatedness of the three components: objectives, learning experiences, evaluation procedures. These form a network of mutual links rather than a linear sequence. I consider this a most valuable conceptualization, because it forces us, educational testers, to take seriously the necessary facts of educational practice (and experience), and not restrict ourselves to the simpler direct link between stated objectives and apparently valid test items. If an achievement test is a means of measuring whether and how much learning has taken place, surely the nature of the opportunity for learning that was provided must be considered. If, that is, we wish not merely to state that those with low scores can do less but also that they failed to learn what they should have learned. As I shall argue in the next section, this latter interpretation is the one we invariably make.

When referring to the opportunity for learning as a factor I am not merely saying that the content validity of an examination is low in schools where the portions were not fully covered. My point is more basic: the validity of an achievement test lies *basically in the congruence* between the tasks it presents and the learning experiences through which the pupil was prepared for these tasks. What is supposed to be clear and appropriate for the test population as a whole may not be so, except for certain subgroups such as schools used for trial testing, or schools where certain teachers teach. By validity in this context I am invoking a similarity between what the test constructor visualizes as the nature of the "encounter" between the pupil and the test, and what actually happens—in terms of task perception, motivation, performance style. Now, if the population includes cultural and socio-economic subgroups that have group characteristics affecting this type of operational validity, we are confronted with a sociological factor that upsets the measurement model. It is true that we consider subgroups when analyzing variance and errors in conventional psychometric terms—those just above or just below a pass mark, those who choose difficult questions, those who tend not to guess, and so on. However, none of these categories has any systematic basis for membership. Who does and who does not fall into a category cannot

be predicted: it is essentially a matter of chance. And it is from a randomness and chance principle that we estimate proportions likely to fall into each category. It is this principle that the sociological information invalidates, for what we have is not random assortments, but a definite and preassigned group membership. It is quite possible that certain group characteristics will cause certain types of error to work in concert and thus drastically distort the 'true' score for all members of the group, beyond the levels envisaged in SE calculations.

I have gone to some circuitous length to state the obvious problem of culture-fairness in testing as related to reliability considerations rather than a straightforward problem of validity. This is partly because of the strategy of dialogue promotion that I have adopted. I do not believe that in response to sociological challenges we can sit down and produce drastically new examinations all of a sudden. Once a scheme with the best logical validity we can attain has been produced, it is only through painfully small steps to understand sources of error and improve reliability that tests improve. Though I have criticized them the Harper and Misra type study represents our best resources in this field—solid empirical data as a base, and carefully articulated plans for all the analysis done, and very thorough documentation. We need these tools and techniques to explore the newer problems that keep arising.

Interpreting and Using Test Results

In the preceding section certain problems relating to the accuracy of a test as measuring instrument were reviewed. Sources of "error" were identified, and the central question raised was, how dependable is the score that an individual might obtain? Here the focus shifts to what is done with the scores of examinees assuming for purposes of discussion that the scores are reasonably accurate. The issue of validity, referred to only tangentially earlier, will be taken up more directly here. Validity lies, ultimately in the validity of purposes for which test results are used. And this depends on what the test is believed to measure.

The question, 'what does' a proper examination measure, can be answered at two levels. At an obvious level the answers are—knowledge, comprehension, etc., in the context of the subjects covered.

There is a second answer that our system does operate with, though at an implicit level. This is related to the individual's general

mental-scholastic capacity, seen more as a stable trait than a (recently) acquired learning outcome. It has important consequences for individuals and groups. This second level of interpretation raises an issue similar to that underlying the heredity—environment debate continuing in some Western countries regarding the mental ability of non-white ethnic groups.

The question being raised here is not that of heredity versus environment. My concern is with the type of reasoning that leads to and follows from the statement that the level of performance on mental ability tests reflects biologically inevitable ceilings on the basic capacity for intellectual activity. The projected argument then is that individuals whose scores are 'low' cannot profit from (or do not deserve to be given) exposure to various further programmes of education. Many examinations based on schools and college curricula are used for selection purposes, directly or indirectly. And reasoning similar to that just mentioned is involved. What I wish to analyse here is the confusion between

- i) a categorization into acceptable/unacceptable in relation to a selection oriented and competitive cut off level, and
- ii) a clinically arrived at and placement oriented categorization into suitable/unsuitable.

The validity problem that arises is at the second level of interpretation referred to earlier. While our tests are by no means perfect we do have a "technology" to enable us to construct items that test knowledge, comprehension, etc. And we are on fairly safe ground when we make predictions about a student who has done well, or demonstrated certain learning outcomes but we remain far less knowledgeable when it comes to students who 'fail'. When we have to suggest what causes failure, and what this failure means in prognostic terms we need to know about the process whereby the correct answer was, or was not, arrived at. I referred in the previous section to assumptions and expectations regarding the nature of the "encounter" between the student and the test. The crux of the problem of culture-bias or culture-fairness lies here.

I will not attempt any definition of culture bias. Let us just note in passing that scores on mental and scholastic tests invariably show a strong association with a 'socio-cultural' scale representing closeness to a dominant sub-culture. We are all aware of the debate or controversy about the relative level of 'educability' of non-white ethnic groups raging in the West. Though we have similar findings here, it

does not seem to have generated any serious academic professional (as opposed to political) debate amongst us. Else we would be far less complacent about the massive correlations between SES/or its equivalent and educational success. The IIT Joint Entrance Examination and the National Science Talent Search Examination are examples. Though we are embarrassed by this, we can claim to have predictive validity on our side. These tests do the job of picking out the candidates most likely to do well in training programmes for which only limited seats on resources are available. They are fair and seem to be fair: that is important.

There is nothing wrong with selection decision in themselves: they are necessary. I fear, however, that selection type thinking carries over into achievement testing contexts where *altogether out of the place*. To begin with I feel there is something wrong with the fact that the same question bank could be used to supply items for Class X final examination and for the IIT Joint Entrance Examination, the National Science Talents Search Examination and Admission tests that selective colleges may employ (though I can't formulate this as formal objection yet). Secondly, as already said, the availability of equal opportunities is taken for granted, and the pupils' ability is the only variable of interest. Of course, the learning outcomes that achievement tests measure are important. Success in further education and survival in modern society require them. This fact seems to overthrow the lack of learning opportunity plea. Students who at the end of Class VII or X, do not demonstrate certain desired learning outcomes will be at a disadvantage. And we should be realistic, not sentimental. Here again it is predictive validity argument that is invoked. This rests, I maintain, on the unwarranted assumption that the examination measures something fundamental like *learning capacity* with high predictive power with respect to *future learning*. Those who do poorly on achievements tests—*because they are poor learners*—will do poorly in future. I hope the parallel with arguments about 'intelligence' being inherited and stable and therefore predictive of intellectual functioning is clear. The negative consequences of branding pupils as poor learners, in terms of self concept, motivation, etc., are well known: even when tests visibly designed to measure intelligence rather than achievement are used. Our system seems to include the double crime of using the wrong type of test for a wrong purpose.

This is certainly not what we intend to do when we write SLO: and construct items. But if examinations (batteries of subjects papers)

are misused as a measure of learning capacity, the responsibility is partly ours, since we do not build in the necessary safeguards. We need, therefore, to study examinations in the real contexts and understand how they relate to know groups of individuals, and what interpretations may be appropriate. Since the availability of social and economic resources is a major dimension on which many subgroups of examinees do vary, culture bias in relation to this dimension is on the aspects of the "real" situation just referred to.

I think the norm-referencing approach which underlies our measurement model, has a restrictive effect on our testing activities. Classical test theory which has given us tools such as the FV and DI measures (in item analysis) is oriented to magnify the differences between individuals. If we begin to look at difference between (groups of) individuals more as reflections of independent variables which we wish to control, rather than as the dependent variable of interest, norm-referencing is not of much value. The DI based on upper group—lower group comparisons is also less relevant. A test made of items with high DI, is in a sense a *measure of closeness to the arbitrary upper group* used in the item analysis. We need to explore other dimensions along which "groups" for discrimination measures can be identified and used to construct tests with new and perhaps *known* biases.

Some areas and strategies for research

The survey of problem areas contained in the earlier sections did not include any rigorous and analytical treatment of specific propositions. It was intended mainly to focus attention on aspects of the preparation and use of examinations that need further attention and study. What follows is a list of tentative proposals which, after discussion can be developed into clearly formulated research projects fitting into a comprehensive and coherent frame work.

- (i) Select with the help of sociologists social categories or sub-groups into which a typical population of examinees may be divided.
- (ii) Study the 'social consequences of educational testing' for these groups separately and note the differential effects of various characteristics of examinations.
- (iii) Based largely on insights emerging at (ii) introduce flexibility and variation in examination schemes and

procedures to accommodate the circumstances and needs of different groups. These should be seen more as experiments in the action research mode rather than 'reforms' the desirability of which is given.

- (iv) Build into examination schemes a strong and definite diagnostic orientation, which will demand a diagnostic approach to interpretation.
- (v) Use newer models for specifying the item characteristics: for discrimination, compare pre-and post-treatment groups, and parallel but sociologically different groups for facility, consider 'perceived difficulty: tendency to choose or attempt.

The main idea underlying these proposals is that we should be able to evolve *parallel schemes* for examinations at different levels. Just as a given blueprint can be used to generate parallel forms of a test, a given educational programme should be the basis for specifying a complex of evaluation requirements. These requirements should not necessarily be linked with evaluation modalities. Parallel or equivalent 'schemes' for different sub-groups participating in the same educational programme (not appearing for the same examination) may then be developed. These will permit inter-individual comparisons within the relevant sub-groups to the extent that they are necessary. Across sub-groups information that promotes an appreciation of diversity will be available, this being something far more valuable educationally than data which leads merely to the calculation of the differences between means.

Modern Trends in Evaluation Methodology

V. NATARAJAN

1.1 (a) There is a considerable range of techniques by which the abilities and acquired skills can be tested and the process of selecting the most appropriate must be governed by a number of important considerations, in particular the:

- (i) purpose for which the assessment is to be undertaken;
- (ii) time and resources available;
- (iii) age and ability of the examinees.

(b) Each technique has advantages and disadvantages, and similarly there are both advantages and disadvantages in using a variety of techniques. If a variety is used, this can, of course, avoid or reduce the disadvantages embodied in a single technique. The combining of information obtained from the use of several techniques is, however, a complex exercise and can often lead in the process to a loss of information rather than a gain. As always in assessment, a balance must be struck and therein lies the art of planning.

1.2 (a) This is simply concerned with a description of a range of the techniques available. It makes no judgements as to their appropriateness in any given situation—that is for the reader to make.

(b) The techniques are generally presented within the framework of six types of assessment, in the following order:

- Written Assessment
- Practical Assessment
- Oral Assessment

Aural Assessment

Questionnaires

Coursework (including projects and field work)

1.3 It is as important to determine when to assess as it is to determine how or what to assess. When talking of timing in relation to assessment the three words 'terminal', 'periodic' and 'continuous' are often used. What exactly do these three words mean and what are their relative merits and demerits?

Terminal is much the easiest of the three words to define. It simply means assessment that takes place at the end of a predetermined set period or unit, as, for example, a school year, a course or a unit of instruction. It ought, therefore, if it is to be valid, to concern itself with the whole of what is being assessed. As a consequence of this requirement, one of the major problems with terminal assessment which is extensively used, particularly in large-scale public examinations, is that of selection, what should be included and what should be excluded? Terminal assessment can, of course, involve more than one measure, but however extensive its nature, selection will always remain a key issue.

1.4 Periodic assessment is designed to permit a series of intermittent probes to be taken over a course or a given period of time. These probes will, however, take place at set periods, and it is this point that ought primarily to distinguish periodic from continuous assessment. Unfortunately the term continuous assessment is often wrongly used. What is ought to mean is a continuous updating of judgements about performance in relation to specific criteria which will allow, at any time, a cumulative judgement to be made about performance upon these same criteria.

Fitness for purpose must apply to the timing of assessment as well as to the methods used. Although theoretically the full range of methods can be used whatever the timing, it is likely, in practice, that genuine programmes of continuous assessment will make use of less formal approaches and place a greater premium upon observation.

1.5 There is a tendency to use a wide range of terms when describing written questions, for example Free Response, Short-answer. It is probably simpler, however, to consider them in relation to the room for manoeuvre they give to the person responding to them against this criterion, written questions run the gamut from 'open' to 'closed' from almost limitless room for manoeuvre (Physical is Fun—Discuss) to

very little room indeed (Paris is the capital of France—True/False). A question at the open end of the spectrum is likely to ask the respondent to supply material and require more writing than reading. Such questions are, moreover, likely to be easier to set than to mark and to provide a relatively limited coverage of the content being assessed. Questions at the closed end have these characteristics reversed, for example the respondent selects from given material and has more reading to do than writing. They are easier to mark than to set and permit a wide content coverage. Incidentally, this system of classification can be applied equally well to oral questioning, except, of course, that reading becomes listening and writing becomes speaking.

1.6 When considering the construction of written questions as here, it is more convenient to use the three broadly based headings of Objective Items, Structured Questions and Open-ended or Essay Questions.

(a) Objective Items

An objective item (item is the term more commonly used than question) is one which is asked in such a way that there is only one predetermined correct answer. This definition rules out any question which requires an answer to be supplied however short, since judgement is needed in the marking of such answer, even if only to determine acceptable degrees of incorrect spelling. It needs emphasising at this point that the only thing that is objective about an objective item or test is its marking, everything else about it involves the taking of subjective decisions, for example, what to include and what to exclude in the options.

(b) Structured Questions

Structure is a far from simple concept and is currently used in at least three different contexts when referring to written questions. First and most common, there is the structure of the format of the question itself in order to break it down into manageable elements for the purpose in hand (even to the provision of potential paragraph headings on the occasion). Secondly, there is the structure of the material used in the question, for example the editing of a document or a quotation; the simplification of a drawing or a diagram. Thirdly, there is the structure of the problem posed; the framing of questions in the form of problems

and dilemmas rather than simply asking the respondent to describe or discuss.

A potential disadvantage of structured questions which may well come in sets related to common material, is their length; they can, ironically, all too easily become extremely wordy in their efforts to clarify.

(c) Open Ended or Essay Questions

The use of the words 'open-ended' implies two things: first, that those answering the questions decide what to include and what not to include in their answers and, secondly, that no precise limits are normally set in the questions themselves as to length or style of answer. They thus deliberately provide little in the way of guidance to the respondent. Both in the classroom and in public secondary examinations, the half-hour essay question, although more often than not it has in reality been partially structured, when, as happens on occasions, longer or shorter answers are asked for, than the time allowance, is adjusted accordingly. The essay and extended written responses in general provide the most appropriate vehicle for assessing command of language and for demonstrating ability to analyse, to synthesise and to reflect.

1.7 The philosophy behind tests composed of objective items, is that marks are awarded only on relevant grounds, and are awarded in such a way that they cannot be influenced by the personal preferences and prejudices of the marker.

1.8 (a) These items can be of two kinds.

In order to follow a description of their format, it is necessary to be familiar with the terminology used, namely:

(i) Discrete Item—a single complete item.

(ii) Stem—the initial part of the item in which the task is stated; it may be in the form of a question, directions or an incomplete statement.

(iii) Options—all the alternative choices/ answers (usually four or five) available to the respondent.

(iv) Key—the correct answer

(v) Distractors—the incorrect alternative choices

(vi) Item Sets—two or more items based upon common material, for example, a passage of text, problem graph, experiment or chart.

(b) An illustrated example of the component parts of a discrete item as given below:

'Which of the following was the primary purpose for which the Craft Guilds were formed in the Middle Ages?

OPTIONS

- A. The regulation of production
 B. The distribution of goods
 C. The control of town governments
 D. The training of new worker

STEM

KEY

DISCTRACTORS

(c) The first kind of item is 'the question', for example: 'which of the following was written as a reply to Burke; Reflections on the French Revoulution?

- (a) The Wealth of Nations
 (b) The Social Contract
 (c) The Rights of Man
 (d) Thoughts on the Present Discontents
 (e) The second kind of item is 'the single completion':

'An example in London of the architecture during the period 1789-1815 is

- (a) The House of Lords
 (b) St. Pancaras Station
 (c) Regent Street
 (d) St. Paul's Cathedral

1.9 (a) Advantages

(i) Items can be answered in a reasonably short space of time and can cover good deal of the subject area in that time.

(ii) Items are easy to mark

(iii) The marking is objective since the answer can only be right or wrong.

(iv) When standardised, such tests can provide a good deal of comparative information about the examinees

(v) Multiple choice tests have high reliability

(vi) They can be set for any level of ability

In setting an item for higher ability examinees there is, however, a danger that a degree of subjectivity may creep in. The following example of what is sometimes known as 'best answer item', illustrates this point. An extract from a book or letter is followed by this item;

Which of the following states best the author's belief about the nature of democracy?

A. The decisions about the restrictions of individual liberties must be

taken by the elected representative of the people.

B. In a democracy individual liberties should not be restricted in any way.

C. Democracy is a form of government in which the rights of individuals should be protected.

D. Democracy is government of the people, by the people, for the people.

(b) Disadvantages

(i) It is very easy to construct poor multiple choice items and hence a poor multiple choice test.

(ii) Only a simple act of recognition and recall is expected of the candidate. There is no demand for reasoning or explanation.

(iii) The construction of a thoroughly valid and reliable item takes a long time.

(iv) Examinees can become too familiar with the techniques and may be influenced in their learning methods, looking for facts rather than seeking a deeper understanding.

(v) Multiple choice test results can be distorted by candidates guessing the answers.

1.10 (a) The following check list, provides a useful set of criteria against which to prepare and judge an item:

- (i) The central question or problem should be clearly stated in the stem.
- (ii) All the distractors should be feasible/plausible.
- (iii) There should be no ambiguities in the stem or the possible responses.
- (iv) All the possible responses should be of approximately the same length.
- (v) The responses should be grammatically correct.
- (vi) Responses should be so constructed that no clues can be obtained from other alternatives.
- (vii) None of the possible responses be synonymous or opposite in meaning.
- (viii) The stem should be constructed so as to assess the level of knowledge specified in the objective.
- (ix) The stem should be written at the appropriate language level for the examinees answering the item.

Once a test item is scientifically constructed and administered the

final stage of evaluation should automatically take place. It, however, depends upon the different approaches to marking.

Approaches to Marking

1.11 It is customary in the literature to illustrate differences in approaches to marking by the terms 'analytic' and 'impression'. The analytic approach is based upon aggregation in which the points to be rewarded and the size of the reward in mark terms are set out in some detail. The impression approaches, on the other hand, implies and overall global judgement and those undertakings in the marking are provided with relatively little detail. Such definitions have resulted in an artificial polarisation; in reality most marking must embody both approaches if it is to do adequate justice to the work being marked and those responsible for it. As such, it represents another facet in the endless struggle in assessment between, on the one hand, objectivity and, on the other, the need to recognise and reward individual differences. Obviously the nature of the subject or subject matter being assessed, the extent to which skills or concepts or facts are involved, whether or not one is concerned with specific or generalised levels of marking, the purpose(s) for which many information gained from the assessment is to be used, the numbers involved, and a whole host of related considerations, will affect the approach being adopted and will reflect it in one direction or another. It will be rare, however, for there not to be some mixture of the two approaches in most marking and this point should be borne in mind when reading the sections on analytic and impression marking which follow.

Analytical Marking

1.12 (a) Analytical marking is the system most frequently used today by large-scale public examining agencies and probably also by teachers in the classroom. Its two basic characteristics are mark allocations and mark schemes. It is, essential to distinguish between these two. The mark scheme provides the comprehensive statement of the explicit criteria against which the relevant work/answers are to be assessed. The mark allocation, which may or may not be indicated to the respondents, assigns specific marks to specific questions or parts of questions, and it is the marker's task to allocate these accurately and appropriately. The scheme may, of course, assist in this regard by illustrating how the mark allocation is to be broken down in relation

to specific kinds of answers.

(b) In the following illustration, the marking schemes provide criteria which are of varying objectivity. The questions which are linked, relate to fabrication and welding techniques.

First Question	Marks
'What is the function of a suppressor on a tungsten arc gas-shielded welding set?'	(4 marks)

Marking Scheme	
A suppressor is fitted to prevent inherent rectification of an alternating current (AC) taking place	(3 marks)
It suppresses the direct current (DC) component	(1 mark)

Second Question	
'What is the function of a contractor in a gas-shielded welding circuit?'	(4 marks)

Marking Scheme	
To ensure that the electrode is dead when not in use.	(4 marks)

Third Question	
'The following gases are used for gas-shielded metal arc welding. In each case state ONE material and the mode of metal transfer for which each gas is most suitable	
A. Argon	
B. Argon plus 15% nitrogen	
C. Argon plus 15% oxygen'	(12 marks)

Marking Scheme	
A. Aluminium, nickel or copper	(2 marks)
Mode: Dip, pulse or spray	(2 marks)
B. Copper	(2 marks)
Mode: Spray	(2 marks)
C. Low carbon or low alloy steels	(2 marks)
Mode: Pulse or Spray	(2 marks)

Acceptable Alternatives

(c) Marking schemes, particularly those prepared for questions where correct terminology is a factor, can be constructed to provide for acceptable or partially correct alternatives. This example of a question

relates to painting and decorating.

Question

'State how the application of glass paint at a temperature near 0°C would brushing qualities of the paint'. (2 marks)

Anticipated Correct Answer

It would increase the viscosity of the paint (2 marks)

Acceptable Alternative Answer

It would thicken the point.

Make it harder to brush (2 marks)

Partially Correct Answers

It would not drip (1 mark)

Brush marks would show (1 mark)

Undercoat would not be covered (1 mark)

(d) The layout and character of a marking scheme will be decided on the type of assessment technique which is to be applied. They need not necessarily be highly specific and the following example presents two alternative schemes for a mathematics question.

Question

'Write down the factors of x^2-9y^2 . Hence or otherwise solve the equations

$$\begin{aligned} x^2-9y^2 &= 15 \\ x-3y &= 5 \end{aligned} \quad (5 \text{ marks})$$

(i) First Alternative Marking Scheme (Analytical)

Factors are $x+3y$ and $x-3y$

B1 For factor (cao)

$$(x+3y)(x-3y) = 15$$

$$\text{but } x-3y = 5$$

$$(x+3y)5 = 15$$

M1 For subtracting 5 for $x-3y$

$$x+3y = 3$$

A1 For this equation

$$2x = 8$$

$$\text{Since } x-3y = 5$$

M1 For attempting to solve the pair of linear equations properly

$$x = 4$$

A1 (cao)

$$\text{By substitution } 4-3y = 5$$

M1 For substituting value of x

$$-3y = 1 \quad y = -1/3$$

A1 (ft)

Total 7 marks

Although this scheme may meet most requirements the second alternative would provide greater flexibility for the marker

(ii) Second Alternative Marking Scheme (Flexible)

	Marks	Notes
Factor are $x+3y$ and $x-3y$	B1	For factors (cao)
$x=3y$ + or $y = \frac{x-5}{3}$	M1	For trying to get $x=$ or $y=$
Substituting for x (or y) in other equation e.g. $(3y+5)^2 - 9y^2 = 15$	M1	For substituting for x
$9y^2 + 30y + 25 - 9y^2 = 15$	A1	For expanding $(3y+5)^2$
$\frac{30y}{3y} = -10$		
$y = -1/3$	A1	(cao)
Substituting $x = -1+5 = 4$	M1	For substituting value of y
	A1	(ft)
		Total 7 marks

Notes: (Alternative Schemes)

M = Method mark (for use of correct method)

A = Accuracy mark (for obtaining the correct answer by using the correct method)

B = Accuracy mark (for obtaining the correct answer independent of method used).

A distinction is sometimes drawn between two sets of circumstances in which marks may be awarded for accuracy.

ft = where the marks could be considered as being in the 'follow through' category. Such marks could be obtained for answers which are in fact incorrect, but are consistent with answers previously given.

cao = marks which can be awarded for the correct answer.

(e) In the next example the effect of an incorrect part answer is considered.

Question

'State which of the following vitamins are water soluble.'

4 marks

Vitamin A B C D K'

Marking Scheme

Vitamins B and C—2 marks each

Deduct 1 mark for each incorrect answer given.

In this example the wording of the question is at fault. It could avoid negative marking and be better phrased as: 'State whether each of the following vitamins is either water soluble or fat soluble'. It would seem unjust to ignore a wrong part answer and award two marks if, for example, the pupil answered B, C and K, since the pupil who did not include K, knowing that it was fat soluble, would receive the same mark as the pupil who did not know.

(f) Marks should not be allocated for anything which is not clearly required to be answered by the phrasing of the question. The following example would be difficult to implement.

Question

'Name the teeth which make up the set of temporary (milk) teeth in a human being'.

8 marks

Marking Scheme

(2 marks)

8 incisors

(2 marks)

4 canines

(2 marks)

8 molars

(2 marks)

Correct order

Total 8 marks

The marking scheme provides for the number and type of teeth and their place in the jaw, but the question only asks that they should be named. The pupil who by chance gave the right answer would gain two marks, but those who answered the question would be penalised.

1.13 (a) It will readily be seen from paragraph 1.12 that analytical marking and the preparation of mark schemes relating to this approach can be quite complex. By contrast, impression marking is simple albeit demanding. When carried out by a single marker/examiner, assessing, say, up to one hundred scripts, the following procedure is adopted.

- (i) A sample of the scripts (up to about one-third) is selected at random to try to replicate the ability range involved.
- (ii) These are then read rapidly by the marker to get an idea of the general standard. No marks will be given, but the papers or essay's or whatever the work may be will be classified as good, moderate

or poor. This preliminary stage can be carried through as many times as is deemed necessary in order to firmly establish the general standard. The degree of discrimination can also be extended or reduced according to need. Five categories, very good, good, moderate, poor and very poor, probably represents the norm at which to aim, and these five categories could be assigned grades A to E or bands of marks if that was thought to be helpful.

(iii) The assessor then reads all the scripts and assigns them to the appropriate piles. It cannot be too strongly stressed that the assessor is passing a general judgement on the quality of each piece of work as the result of a quick general impression and is not required to look for points of detail.

(iv) If it is necessary to establish a rank order within categories then every piece of work within each category will have to be re-read in order to establish the end points, for example the best and the worst piece of work. All the remaining pieces of work will then need to be ranked in relation to these end points.

(b) If the exercise is large-scale one then both the number of pieces of work and the number of assessors will be increased. The basic principles, however, remain the same, although it is possible that multiple marking will be used (see paragraph 1.14. Impression marking tends to be used for marking subjective work such as poetry or painting or English essays).

(c) Any approach to marking, as with any approach to assessment, tends to benefit some and disadvantage others. The analytical approach benefits those students who are sound on their factual knowledge and can display that knowledge in an orderly and sequential fashion without much in the way of flair or panache.

The impression approach aids those students who can express themselves fluently but are on occasion short on information. You can conduct an interesting experiment by marking the same pieces of work first with a detailed mark scheme and then after an interval of time (say two weeks) by impression. In general you will find that the two judgements correspond for most of your students, but there are some who will do better or worse according to the approach adopted. This merely confirms the point made at the outset of the paragraphs on marking, that wherever possible you should try to use both approaches in order to provide a balanced judgement.

Multiple Marking

1.14 (a) The descriptions give in paragraphs 1.12 and 1.13 of the two approaches have assumed that each piece of work has only been marked by one person, although, of course, it may, and probably will, have been checked by others. This need not be the case; indeed when impression marking is employed on a large scale it often involves multiple marking which makes use of two or three markers for each piece of work. There are two possible ways of using additional markers. First simply to provide further judgements based on the same criteria whatever these may be. When this is done it is normal practice to average out the different judgements and give that average to the student. This presupposes that two are inherently better one and three are better still, which is not, of course, necessarily true. You may simply have three similar judgements. If all are sound or all are unsound then you will not have benefitted the person being assessed one iota and you will have wasted resources.

(b) Moreover, if the judgements vary as a result of the vagaries of the assessors and not as a result of the nature of the work being assessed, then again no benefit will result. The second alternative is to ask a different marker to look for and to assess something different. One common illustration of this is to ask one marker to look at the mechanics of an English essay, spelling, punctuation and the like, whilst another looks at the range of vocabulary and so on. Under such circumstances one would expect the marks to differ and one could, therefore, legitimately add them up as they stood and use them as the basis upon which to judge the assessed person. Whatever the deficiencies, multiple marking does ensure that a piece of work is judged by more than one person and this is an important principle, especially when the work involved is subjective in nature. In terms of improved reliability there is no great value, incidentally, in using more than three markers.

Criteria Related Marking

1.15 (a) As already indicated in paragraph 1.12 (b) recent work on the assessment of skills and the consideration of problems of assessment in relation to a wider range of ability has brought about a reappraisal of marking approaches as well as the techniques of assessment.

The approach to marking, described here, has been developed as

part of the 'CSE Examination for History 13-16', a project sponsored by the Schools Council, which has been examining candidates since 1976. A brief summary of the system follows. This gives some of the salient features of the procedures adopted, but greater detail, including examples of the question paper, answers by the pupils and marking comments, can be obtained from the report 'The 1980 Written Examination History 13-16 CSE Examination, Schools Council Project'.

(b) From experience gained in previous examinations, it had become apparent that a traditionally based marking scheme was not satisfactory for an examination designed to test skills in the use of evidence. Such schemes did not:

(i) permit sufficient discrimination between different answers to a question;

(ii) encourage a sufficient variety of responses, in that the scheme implied that there was a correct answer, and markers were under an obligation to disregard some answers which merited reward;

(iii) reward adequately examinees who demonstrated that they had grasped project concepts. This was a consequence of the mark scheme being constructed around anticipated responses from examinees in respect of information.

(c) It was, therefore decided to construct a scheme of marking based upon a hierarchically ordered set of criteria. The principle behind the 'ordering' was the establishment of a progressive series of levels of abstraction. This meant taking less for granted about the necessity for examinees to have a good grasp of supplied sources and going more for development of ideas based on, or arising out of, the information given. An example of such a set is given below:

Level 1

The ability to relate conclusions to the evidence which had been supplied in the question

Level 2

The ability to pose specific questions in respect of the evidence supplied

Level 3

The ability to make simple generalisations on the basis of the evidence supplied.

Level 4

The ability to extend an account by cross-referencing between sources of information

Level 5

The ultimate level for that age range as regards their ability to consider what is to count as sufficiency of evidence.

(d) The criteria were constructed by first identifying the minimum response level which would be worthy of any reward (level 1), and then working through the levels to Level 5, which was, for the question concerned, seen as the highest criterion likely to emerge from the answers of that age group. The set quoted in the example would, of course, be only applicable to one particular question. The actual answers might well reveal that the levels were not sufficiently discriminatory and more levels than those given in the example could be required.

(e) Prior to the examination, tentative hierarchies were constructed; these were then adjusted, after scrutiny of a sample of completed papers, by a group of teachers of the subject. The final set of criteria were thus shaped more by examinees' answers, with their conceptions and misconceptions, than by any assumptions about anticipated responses.

(f) Having established the levels, the range of marks for each level was determined on the basis of weighing, conceptual understanding, length of answer required, degree of difficulty, etc. In the example quoted later (paragraph 1.15 (h)), the allocation of marks for the question was 10, and each level was allowed a band of 2-3 marks to allow for some personal appraisal of the quality of the response by the marker.

(g) Markers were then provided with the adjusted levels of criteria plus examples of particular examinees answers which were considered to meet specified levels. They were then required to identify the highest level of criterion met by the student in each answer and to select a mark from within the range of marks specified for that criterion.

(h) An example follows which relates to a question in which the students were invited to comment on the differences between two accounts provided for them on what might have happened to the Romanov family. The question reads as follows: 'In what way do these two accounts of Sergeyev's investigation differ?'

Level 1—Criteria

Marks

Valid superficial differences, or focus on concrete difference

1-2

Examples of students' answers

'The dates are contradictory'. 'One is given by a Russian', one by an American'. 'Because on one he has all the information on the folder and on the other he just speaks'.

Note: One difference is sufficient to score 2 marks.

Level 2—Criteria

Comprehension - disagreement whether all or part of the family was murdered and, if so, where

3-5

Example of student answer

'In evidence A it says all the Royal Family were massacred in the house—and in B it says that the Empress and her children were not shot in that house'.

Note: Reference to number: 3 marks, reference to house: 4 marks, reference to both 5 marks.

Level 3—Criteria

Reference to attitudes, i.e. certainty, doubt etc.

6-7

Example of student answer

'In the first account Sergeyev was quite definite. In the second account he says that the massacre was supposed to have taken place'.

Level 4—Criteria

Recognise the different provenance of the source

9-10

Example of student answer

'In evidence A, Judge Sergeyev strongly believes the family was shot (and this was said to have been written by himself) but was handed over to Judge Sokolov. But evidence B states that only the family doctors, two servants and the maids were shot. (This was written in the New York Tribune.) This paper could be biased on either account.'

Summing up—Criteria related marking

(i) in conclusion it can be said that this approach when combined with a shift in the timing of weighing from before to after marking ('Post hoc') has several general advantages. It enables markers to compensate for departures from anticipated responses to questions. Questions may elicit higher levels of skills of understanding than expected and require higher weighing.

Conversely, questions may have proved to be more difficult than expected. This may be due to:

- (i) poor layout;
- (ii) ambiguities in wording;
- (iii) insufficient structure to invite more than self-evident responses;
- (iv) source material being too difficult for the ability level of the examinees

Post hoc weighing would seem to be fairer to pupils and more rational an application of assessment. It also has the advantage of freeing the examiner to experiment, both with source materials and styles of questions, without prejudice to the pupils being assessed.

In addition, the system has proved to be a considerable aid to curriculum evaluation (as can be seen by reference to SREB (1980 and b). It may well be asked, however, whether the approach presents markers with undue difficulty. Experience has shown that, with training, markers can operate this scheme as satisfactorily as any other. It has also shown that the real difficulty lies in bringing about the change of attitude necessary if teachers are to relate actual work to the achievement of criteria.

Positive and Negative Marking

1.16 Regardless of the approach used, an important factor in relation to marking is the attitude of those undertaking it. This is often expressed as the difference between positive and negative marking. Does one reward marks for what is correct ('correct' being defined in relation to the criteria being used and not simply meaning accurate), or does one deduct marks for what is incorrect? In the first case the approach is positive, whilst in the second it is negative. Quite apart from its implications for the whole teaching/learning process, the use of negative marking can quite markedly reduce a student's score. Try using a positive and a negative scheme for the marking of an English or a French (or any other language) dictation and you will soon see

the differences that can result. In general, always try to be positive and build this into your marking arrangements.

One slightly different facet of positive marking is a willingness to use the full range of available marks. Most people when marking work are extremely miserly and award 'full marks' with reluctance. This is less easy to avoid doing in a subject like Mathematics than it is in a subject like English, but even here 'perfection is seen to be out of the reach of students'! One way of trying to eliminate this negative attitude of mind lies through the use of bonus marks. This simply means giving markers an extra allocation of mark, over and above the overall total for them to use when work of a particularly high quality is observed.

Preparation of Marks Schemes

1.17 (a) Reference has been made frequently in paragraph 1.16 to mark schemes. They obviously assume greater importance when an analytic or criteria related approach is being adopted than when using impression marking, although even here a marking framework is necessary. Whilst there are no absolute rules for the preparation of mark schemes, they can only benefit from the application of a check list containing questions such as the following:

- (i) Are the suggested answers appropriate to the questions?
- (ii) Are the suggested answers technically and/or numerically correct?
- (iii) Does the scheme embrace every point required by the question and allocate marks for each point?
- (iv) Does the answer in the scheme include only points required by the question?
- (v) Are the marks allocated strictly according to the knowledge and abilities which the question requires the candidate to demonstrate?
- (vi) Is there adequate provision for acceptable alternative answers?
- (vii) Are the marks commensurate with the degree of difficulty of the question and the time which would be required to answer it?
- (viii) Is the time allowance appropriate for the work required?
- (ix) Is the marking scheme sufficiently broken down to allow the marking to be as objective as possible?
- (x) Is the totalling of marks correct?
- (xi) Does the marking scheme reflect undue bias towards one viewpoint at the expense of others?

UNIVERSITY AND COLLEGE ADMINISTRATION

Preparing Academic Administrators for Twenty First Century

PETER J. MURPHY

Educational Leadership

How institutions of higher education respond to advances in technology, social reforms, demands for accountability and limited government support will be determined, to a significant extent, by the leadership style of senior administrators. Higher education administrators have tended, with few exceptions, to be conservative, reactive, conforming educational leaders. Though many of them have proclaimed themselves to be assertive and innovative, their behaviour has not substantiated this claim. Often senior administrators are perceived by instructors and support staff to employ power coercive strategies for introducing new policies. Participatory management is not a reality in many institutions.

Never in the past have institutions of higher education been exposed to continual external pressure demanding that they account in detail how resources are utilized. For decades, higher education administrators have been able to 'muddle through' various institutional crises by employing incremental policies. This strategy has been *success because, as Dye (1972) notes incremental policies minimize conflicts, maintain the status quo and ensure the existing political* system is preserved. The magnitude, frequency and complexity of contemporary administrative and managerial issues require more comprehensive and rational policies. Many executives are beginning

to realise that they are not confronted with the decision of whether to change or how to change, but of whether to plan or direct this change themselves or have it completed by an agency outside their institutions.

Directing a higher education institution is becoming an extremely demanding task. When institutions were relatively simple organizations and society was more stable, educational executives were mainly concerned with resolving managerial issues. The term management being applied as used in North America to mean "those aspects which are more routine, definitive, programmatic and susceptible to quantitative methods" (Hodgkinson, 1978,p.5). As both institutions and society have increased in complexity, executives have been increasingly confronted with more administrative issues. The term administration referring to "those aspects dealing more with the formulation of purpose, the value-laden issues, and the human component of organizations" (Hodgkinson, 1978,p.5).

Though the focus of their responsibility may have changed, many administrators tend to devote most of their time and energy to managerial rather than administrative issues. This behaviour occurs because standard procedures often exist for resolving managerial issues while innovative strategies have to be developed for administrative problems. Furthermore, many executives 'fall into the trap' of only dealing with here and now issues rather than giving adequate consideration to future contingencies. As a consequence, these executives become 'fire-fighters' rather than anticipatory leaders.

Many educational administrators do not appear to possess the knowledge, skills and foresight necessary for directing effectively higher education institutions in the twenty-first century. A multitude of factors have contributed to this circumstance and these have yet to be adequately studied. Preliminary analysis suggests that the selection criteria for administrative positions and the professional development opportunities available to senior executives have had a significant impact on this situation.

Conservative, reactive, conforming administrators were successful in an era when the socio-economic environment was relatively stable. Usually, educational changes and social reforms could easily be accommodated, as noted previously, by incremental policies. Selection criteria for administrative positions reflected the conservative character of the educational enterprise.

Many individuals who commenced their professional careers in the fifties, sixties and early seventies presently occupy administrative

positions. The leadership styles which these administrators acquired during the early years of their careers are inappropriate for dealing with the managerial and administrative problems generated by our modern society. Often administrators find it difficult to significantly change their behaviour after being a senior executive for so many years.

If institutions of higher education are to respond effectively to the demands of a highly technological and socially diverse society, new types of educational leaders must be recruited for senior administrative positions. What selection criteria should be employed to identify these dynamic educators? Useful criteria could be obtained from studying the characteristics of effective administrators.

According to Campbell (1979) effective educational administrators possess: (1) above average intelligence; (2) mental stability; (3) a high energy level; (4) the ability to provide an organization with direction; (5) sound interpersonal relations skills; (6) a willingness to take risks; and (7) political astuteness. The author would add to this list, a good self image, wide teaching experience, a commitment to life long learning and an awareness of their own values.

Higher education administrators in the twenty-first century, as Fast (1977) so astutely notes, must "be dynamic, flexible, and precise—able to work with people, anticipate and accommodate change and make decision" (p.38). He further emphasizes that these educational leaders should be individuals "who are not afraid to take positions, to take risks, to develop new policies and to meet needs" (p.37). Administrators of the future, according to Fantini (1981), must be anticipatory. Not only should they be concerned about the present and the future, but they must be willing to share their responsibilities with junior colleagues in their institutions and with civic leaders in the local community. Educational executives must acquire skills, that "will enhance their image with leaders of business and industry in order to gain greater support for all educational programmes" (Hoyle, 1981, p.254).

Perhaps, it is important to note that higher education administrators are not expected to be superhuman. What is expected of them, however, is that they provide institutions with leadership appropriate to the times. Even the most effective administrators will become professionally jaded if they are not provided with learning experience which rejuvenate them and sensitize them to the changes occurring in their work life.

Preparation for Administration

The majority of administrator preparation programmes are offered by Canadian universities and are designed for practising and potential principals (School leaders). Most of the students who attend these programmes study for a Masters degree with a specialization in educational administration. A few large universities, such as the University of Toronto, University of Alberta and the University of British Columbia provide graduate studies for higher education. Usually this graduate work is designed for administrators who want to study at the doctoral level. After surveying professional preparation programmes for educational administrators in Canada, Miklos and Nixon (1979) reported that "the changing educational scene would seem to demand adjustments in both the content of and the approaches to the study of educational administration"(p.27).

When commenting on the preparation of educational administrators in the United States, Hoyle (1981) was more critical than Miklos and Nixon on the professional learning experiences being offered practitioners. He strongly emphasized that:

With only a few notable exceptions educational administrators are not being adequately prepared for the twenty-first century and will not be until greater attention is given to the problem areas of here-and-now vs. future administrator preparation, the limited ability of administrators to focus on the future, and the limited knowledge our research has uncovered on the actual effect of schooling on our students. (pp. 251-252).

Nearly a decade ago, Farquhar (1975) expressed similar concerns about administrator preparation programmes. He was disturbed by the procedures employed to identify, recruit and select people for preparation programmes. The effectiveness of administrative training he maintained was dependent upon the quality of the students who received it.

The preparation of educational administration in the European Community until very recently has been minimal. The academic studies completed by educational administrators prior to commencing their professional careers was deemed more than adequate for coping with the duties they were assigned. Generally, a teacher is selected to become an administrator because of his social contacts and above average teaching performance (Van Daele, 1982). However, the 'winds of change' have been sweeping through European countries. In 1979,

Hughes (1982) was awarded a research grant to study the professional development opportunities available to senior staff in schools and colleges in England and Wales. Based on the data gathered in the survey, Hughes recommended a School Management Unit be established for developing training activities in School management.

The University of London recently established a Centre for Staff Development in Higher Education. Their unit is affiliated with the Centre for Studies in Higher Education at Pennsylvania State University. Through a series of cooperative activities the two universities are endeavouring to provide students with more comprehensive learning experiences. The Ph.D. programme offered candidates and provides them with an opportunity to undertake research which has significant implications for the governance of higher education. The University of Lancaster has been offered graduate studies in higher education from several years. The number of students involved in research on higher education has been small.

Most administrator preparation programmes, irrespective of their national setting, require candidates to register as fulltime or part-time students. Furthermore, the programmes are structured in a manner which requires candidates to attend classes for several years. Due to the important position which most educational executives hold in higher education institutions they are unable to be absent from their offices for any extended period of time. After discussing this issue at length with Canadian executives, the author believes that three weeks is the longest period most higher education administrators can devote to professional development activities, on a full-time basis, at anyone time. Existing preparation programmes do not appear to be congruent with a practitioners worklife. New, short-term, professional development programmes urgently need establishing for higher education executives. These programmes must be of a high quality and concerned with contemporary issues in higher education. Learning experiences must strengthen the linkage between the theory and practice of administration. The problems associated with managing contraction (Taylor, 1980) must give adequate attention.

International Cooperation

Most institutions of higher education are being subjected to substantive financial constraints. Consequently, limited resources are available for professional development activities. What funds exist for staff training

are usually awarded to junior instructors and administrators who possess limited experience and knowledge of higher education. Most senior executives do have access to travel funds which allows them to attend the occasional conference or regional meeting.

The fiscal shortages in education are expected to continue for at least another decade. Under these economic conditions, it is doubtful whether educational executive will have access to funds for improving their own professional competence. New professional programmes are needed which will expose higher education executives to high quality, well designed, learning experiences, at minimal cost. Offering any type of educational service without incurring substantial expenses requires creative thought and imagination.

The task under discussion however, is not impossible. In fact, Culbertson (1981), in an article on international networking, provided the foundation for a new professional development experience which possess the potential for providing higher education executives with the professional rejuvenation they need to be effective leaders. Presently, as Culbertson, reports, a number of international professional associates, such as the commonwealth Council for Educational Administration, the European Forum on Educational Administration, the Inter-American Society for Educational Administration and the University Council for Education Administration, have established informal networks for members.

Most of the international associations arrange annual conferences, so members can meet on a regular basis to discuss research studies, to comment on future contingencies and to examine contemporary issues in educational administration. These international associations have facilitated "student and professional exchange between nations, cooperative international studies and the development of journals which disseminate ideas internationally". (Culbertson, 1981, p.279). The major benefactors of these activities have been university scholars which is to be expected in view of their involvement in empirical research, the publication of articles and the presentation of papers at scholarly conferences.

How can the international networks improve the management, administrative and research capacities of insitutions of higher education? Culbertson in a clear and precise manner:

First, as is well known, we understand dimensions of our own problems more clearly when we understand how these problems are expressed in other cultures. Second, we are required to view problems

in larger terms and to understand not only the cross-continental dynamics of their expression but also the cross-continental potential for ameliorating the problems. (p. 281).

As we move into the twenty-first century greater economic interdependency among nations and advances in communication technology are bringing into reality the concept of the world being a global village. Many nations are being confronted by common economic, social, multi-cultural and educational problems.

The leadership crisis in higher education is a world wide phenomenon. In fact, ineffective leadership regrettably characterizes institutions at all levels of national education systems. Developing countries, according to Ed-Ghannam (1977), "have faced modern times with a heavy heritage of administrative backwardness" (p.104). At IIP '78, Mascaro (1980) reported that administrator preparation programmes in South American countries gave no consideration to the administrator as a mediator. Yet, resolving conflict among interest groups is one of the principal activities in contemporary administration. The World Bank (1980) in a recent report *Education: Sector Paper* stated that "the development of national managerial, administrative and analytic capacities lags behind the growth in size and complexity of the education enterprise" (p.53).

Greater international cooperation must be forthcoming if the complex management and administrative problems in education are to be resolved. At the IVth World Congress of the World Council of Comparative Education Societies, Yoo (1980) stated that the "greater task confronting today's education, regardless of large or small countries, is the cultivation of understanding and solidarity among nations" (p.44). If higher education executives are to be adequately prepared for the twenty-first century, then as Culbertson (1981) emphasizes they must "acquire a World perspective and effective skills for anticipating and managing the future" (p. 283).

An Intervisitation Scheme for Higher Education Executives

Preliminary discussions have taken place for establishing international intervisitation scheme for higher education executives in the United Kingdom and British Columbia. Similar discussions have occurred for developing an intervisitation scheme at the secondary level for administrators involved in special education in Scotland and British Columbia. Both schemes are designed to provide participants with

an opportunity to meet with colleagues from a different socio-economic environment to discuss common areas of concern in administration.

The intervisitation schemes would be assigned specific themes to ensure learning experienced focussed on contemporary issues. The theme for the higher education programme might be long range planning, while that for the special education administrators could be 'mainstreaming'. Both these themes are of interest to university scholars and field practitioners in the United Kingdom and British Columbia.

Prior to becoming involved in structured learning experiences, all participants would be acquainted with the cultural, social, political, economic and academic character of the region they visit. Once the executives had been sensitized to the socio-political milieu of the community, tours of local universities, colleagues, technical institutes and government departments would be arranged. During these tours the executives would meet with chief instructors and senior administrators to discuss specific managerial and administrative issues. The executives would be required to complete a special observation notebook which would later serve as a base for several reports.

A number of professional seminars would be organised by the cooperating university so the executive could meet with senior government officials, University scholars and higher education executives. The seminars would focus on issues which were directly related to the theme of the exchange. Discussion would be directed at examining issues from a comparative perspective. Several social events would allow the executives to meet new colleagues on an informal basis.

If conditions permitted, senior administrators in the host community would be requested to billet the visiting executives. This practice would reduce expenses and familiarize the visiting executives with the life style of the host community. The intervisitation period would be limited to three weeks so the executives professional and personal lives would not be unduly disturbed. At the completion of the programme, the executives would be provided with time to prepare reports on their experiences and on a specific issue which they studied in depth. These reports would later be published in a monograph for dissemination to higher education administrators in the regions.

Upon returning to their home community, the executives would be expected to communicate with their new colleagues in the region they visited regarding strategies which they were employing, as a

consequence of their visit, to resolve specific managerial and administrative issues. After approximately two months, the higher education administrators from the host community would themselves become visiting executives. These administrators would be offered learning experiences and professional development opportunities similar to those which they provided their new colleagues.

The intervisitation scheme for educational administrators involved in special education would parallel the programme outlined for higher education executives. All professional activities would be designed to comply with the theme of the visitation scheme.

The first question raised by executives, after being informed of this new professional development concept, are concerned with the cost of participating in a scheme. The greatest item of expense is naturally travel. By careful planning travel expenses can be substantially reduced by taking advantage of charter flights and by scheduling the visitation period at an off-peak travel time. In view of the leadership crisis in education, travel grants may be made available to participants by either a government or non-government agency. If travel assistance was forthcoming and visiting executives took advantage of the billet arrangements, the cost of participating in this new professional experience would be minimal.

Comment

It higher education executives are to provide the institutions they serve with appropriate leadership in the twenty-first century, they must be in good intellectual and professional condition. Regretfully, many present day administrators are 'professionally jaded' and 'intellectually stagnant'. Due to the present economic climate, funds are not available for them to become involved in long term professional development programmes. Furthermore, most of these administrators occupy positions of authority, consequently, they cannot be absent from their offices for long periods of time. The professional development opportunities to which they have access are often narrow in scope and lacking in quality. Under these circumstances, higher education executives cannot be severely criticized for their present condition.

International intervisitation schemes are a new professional development concept which offers higher education executives to examine important managerial and administrative issues from a different perspective. By sharing their knowledge and experiences with

international colleagues enhances their own professional competence as well as that of their new colleagues. Bonds of friendship and professional contacts are established which would probably be maintained for many years. If the experimental intervisitation schemes described in this report are successful, they could serve as a model for many others. Over time an international grid could be established which would enable executives from around the world to visit with each other for professional purposes. Higher educationa executives must have access to new professional development experiences, otherwise they will 'muddle through' crisis after crisis.

Administration of University Affiliated College Systems

M.R. RAO

V.B. RAJU

This paper attempts to study the administration of the University affiliated College systems in India. The term 'organisation' refers to a system of consciously co-ordinated activities or forces of two or more persons. Sometimes two or more organisations which are separate legal entities are closely related to and dependent on each other they form a system of primary and secondary organisations. A system is considered to be a complex unit formed of any diverse parts subject to a common plan or serving a common purpose. The sub-units of the system are regarded as secondary organisations; they interact with each other and the primary organisation and such interaction make the system larger than the mere sum of its parts. Such a system may form part of a still larger and more complex organisation.

The complex system of primary and secondary organisations has special implications for the problem of centralisation versus decentralisation of decision making authority. Decentralisation involves the development of an administrative situation wherein the secondary organisations enjoy relatively greater decision making power within the framework of the system. The leading scholars of administration encourage the philosophy of decentralisation and consider it desirable as a generally good principle of administration. At the same time, it has been suggested that such a philosophy of "decentralisation must be tempered by selective centralisation of certain areas of vital major

policy". As authority is delegatd under conditions of decentralisation, the need for centralised control is ever present. "Decentralised management with centralised control" is suggested as the solution to the controversy of centralisation versus decentralisation.

The size of the Government Body is not uniform in all Colleges. In some cases, the Governing Body consists of over forty members. It is difficult to determine the ideal size of the Governing Body since the colleges differ in age, student strength and efficiency. The Governing Body is composed of representative of the promoters of the college, the University and the State Government, the teaching staff of the college besides the principal as an ex-officio member. The promoters of the college wish that ther representatives on the Governing Body will at least have a simple majority over those of the university, the State Government and the teachers. Perhaps keeping this in mind, the Andhra University has recently suggested that the size of the Government Body of an affiliated college should not be less than seven and not more than fifteen in total.

The University has substantial authority over the colleges. It prescribes the physical and financial standard to be met by the colleges, the minimum academic qualifications of the teachers to be recruited by them and the course content and textbooks for the various courses of study offered. The examinations are the prerogative of the university. It has the power to inspect the colleges and scrutinise their financial and academic records. It seeks to control the activities of the colleges so that they operate according to the norms and standards prescribed.

Within the framework of the standards prescribed by the University, the colleges exercise considerable discretion in mananging their institutions. They have their own funds and budgets and are independnt enough in hiring and firing. They are responsible for the discipline and well-being of their students. While the University tries to control their activities they expect to have a relatively free role in a hghly decentralised system. The degree of control desired by the University is often in conflict with the degree of decentralisation desired by the colleges.

The number of colleges affiliated to a University has a significant bearing on the latter's ability to administer them. There appear to be no minimum and maximum limits to the number of colleges that may be affiliated to a University in India. In the opinion of one group of experts, the number "should not ordinarily exceed about thirty and certainly not beyond twice this size." The prevailing practice is that

the University is assigned (by the statute governing it) a particular number of revenue districts and the university can grant affiliation to as many colleges as it considers warranted by the need for higher education within the area. The number of colleges has been increasing from year to year and the university may not be in a position to pay continuous attention to the colleges. For instance, "no reorganisation of the Calcutta University however radical or ingenious, can be of any avail unless its size is reduced drastically".

Before proceeding to examine the areas of administrative relationship between the university and the colleges, it is necessary to understand the expectations made by each of the other. The university expects the college to,

- a) maintain good academic standards.
- b) employ adequate and well qualified teaching staff;
- c) maintain sound financial position, and
- d) provide and maintain adequate physical facilities—buildings with amenities, well equipped laboratories and libraries, hostels and recreational and medical facilities—for students and teachers.

The colleges expect from the University

- a) guidance to solve academic problems,
- b) assistance for improving their teachers qualifications,
- c) teaching assistance in those areas of instruction where the colleges have deficiencies.

d) opportunity for their teachers to utilise the library and research facilities of the University, and

- e) opportunity for their students to participate in the University's academic, cultural and extra-curricular activities.

In view of its expectations of the colleges, the University prescribes norms and standards to be fulfilled by them in three important areas, affiliation, finance and personnel.

Grant of Affiliation

The first aspect of the administration of the colleges by the University is the grant of affiliation. The University has the power to affiliate or recognise colleges and hostels not maintained by the University and to withdraw such affiliation or recognition. The promoters of a new college present their case for affiliation to the University authorities. The need for the new college is expected to be established on the basis of rational considerations like the age and income structure

of population of the area, the number of college-seeking students produced by the intermediate colleges operating in the area, the absence of an affiliated college in the area or, if one or two colleges are operating already, their inability to absorb all the college-seeking students of the area. In practice the promotion of several new colleges appears to be based not merely on the real need for them but also on non-academic considerations which are described below:

1. Political factors; among others, influence the promotion of a new college. Control of a college is a source of political power and a good deal of patronage. Prominent political figures lend their names and sometimes their energies to a college because of the possible political power accruing from participation.

2. Geo-political factors: The leading members of the populace of a certain place may consider that the setting up of a new college at their place is likely to enhance their status and prestige in relation to other places. Colleges are generally well regarded local institutions and control of a college often carries with it prestige in local community affairs, wealthy local members may be generously donating to the new College Fund, even if their place is remote from other centres within the University area with little scope for academic and intellectual contact with the University.

3. Socio-political factors: Some colleges owe their origins to the strong interest taken by the powerful social classes in a particular area. They may promote the new college for self aggrandizement, though eventually the other social classes of that area may derive the benefits of the new college. If there are two or more rival classes in the area, each one may set up a college of its own in the same place irrespective of the real need for such multiplication of educational facilities.

In this context, the opinion of Prof. V.K.R.V. Rao is to be kept in mind: "The location of colleges will have to be carefully planned to see that every new college attains a viable size, where it becomes both economical and efficient within three to five years and to ensure that there is no unhealthy educational competition between a college and a college".

Before Affiliation-Promises

The University examines the case for the new college and if satisfied, prescribes physical, financial and academic standards to be met by the promoters for grant of affiliation. Generally the standards prescribed

deal with the provision by the college of buildings, well equipped laboratories and libraries, recreational and medical facilities for students and teachers, of adequate funds for meeting capital expenditure programmes and recurring expenditure, and of adequate and well qualified teachers. These standards are not uniform to all the universities in India. In the view of the UGC Committee on Colleges, 1967, the conditions prescribed by Andhra University seemed "best suited to discourage the proliferation of substandard colleges and also conducive to the proper development of new colleges".

The real problem appears to be not one of determining uniformly ideal standards of affiliation, but one of fulfilment of the existing standards by the college. The promoters of the new college are willing to comply with the prescribed conditions. As a new college is unable to fulfil all the conditions at the very outset and as reasonable time is needed to complete capital expenditure programmes like permanent buildings and laboratories, the promoters request the university to grant temporary affiliation, "Some pressures are brought on the universities to grant recognition and affiliation to new colleges on a temporary basis and conditions which have no chance of being fulfilled. Even for the grant of temporary affiliation, the promoters of the new college must provide certain basic requirements relating to staff, library and laboratory equipment at the very outset".

After Affiliation-Postponement of Promises

After obtaining the temporary affiliation, the new college may take a lethargic attitude and postpone the fulfilment of its promises to the university in respect of provision of physical and financial resources. When the term of temporary affiliation draws near to a close, the college requests the University for extension of the temporary affiliation, and the University generally obliges such a request in view of the hardship that might be caused to the students and teachers in case of disaffiliation. Once affiliation is granted, "it is felt as almost inhuman to disaffiliate the institution even if academic considerations overwhelmingly demand such a step. The threat of disaffiliation can only be an empty threat" in such a situation.

Besides the temporarily affiliated colleges, the older ones enjoying permanent affiliation also manage to exist with considerable deviation from the standards prescribed by the University. The great majority of them are ill-housed, impoverished and frightfully over-crowded. The

laboratories are inadequate and overworked. Libraries and reading rooms are only nominal they are there only to satisfy the conditions stipulated by the university.

Finances of College

One of the main reasons for deviation by the colleges from the university's standards, is the inadequacy and the inefficient management of finances by the colleges.

The University prescribed that the college must maintain a certain amount of money in deposit as its capital fund as a prerequisite for affiliation. Every new college should provide Rs.1 lakh at the time of affiliation and a sum of Rs.1 lakh each during the second and third years of affiliation. Further Rs.50,000/- should be deposited for the purpose of offering instruction in a group of science subjects including mathematics. For every additional science subject, an additional sum of Rs.25,000 should be deposited. The college in practice may be able to mobilise the initial sum of Rs.1 lakh at the time of affiliation, but may be quite unable to accumulate such fund to the desired level after two or three years. It may postpone its obligation in this regard indefinitely and the university finally may even waive this condition.

In order to discourage the growth of new colleges without adequate financial resources which are necessary for providing physical and academic facilities, it is desirable to require every new college to raise Rs.5 lakhs initially and build that amount upto Rs.10 lakhs within five years.

While the university prescribes the capital funds to be raised and maintained by the colleges, the State Governments offer financial assistance to almost every college for both development purposes and maintenance expenditure. The Grants-in-Aid Code rules of some State Governments are quite liberal; such rules are not uniform to all the State Governments in respect of the admissible items of income and expenditure for the purpose of making maintenance grants to the colleges. It is desirable that the University Grants Commission suggest a uniform pattern of admissible items for income and expenditure to all the state Governments. At present some States are meeting 100 per cent of the net working deficit of the colleges in addition to making development grants.

Almost all colleges receive good financial assistance from the U.G.C. Such assistance is generally available for the purpose of

development programmes but not to enable the colleges to fulfil the conditions of affiliation. The U.G.C. offers (a) 100 per cent grants to core development items like library books and journals, teachers' library, laboratory equipment and (b) on a sharing basis to non-core items. Many colleges seek the U.G.C. assistance for the first group of items but not for the second group. It is unfortunate that many colleges, by not being able to make matching contribution, are not availing of the U.G.C. assistance for non-core items.

The U.G.C. assistance to colleges is channelled through the University concerned to ensure that such assistance is properly utilised by colleges for the stated purposes. But with the increasing number of colleges affiliated to a University it may not be in a position to pay continuous attention to them.

Inadequacy is only one aspect of the problem of college finances; the other equally important one is the inefficient management by colleges of their financial resources. The University, the State Government and the U.G.C. expect the colleges to utilise their limited financial resources according to the conditions prescribed by them. In practice the colleges appear to be deviating from the standards prescribed by the University and other agencies in the management of their finances. Some such practices are given below:

1. The capital fund raised by the college is required by the University to be kept in deposit in the joint names of the University's Registrar and the Governing Body of the college so that the fund will not be diverted for an unauthorised purpose. But several colleges keep this capital fund only in the name of the Governing body so that they can operate it independently without the knowledge of the University.

2. The funds arising from special fees are to be operated by the Principal of the College and should not be diverted for any purpose other than the special purpose for which they have been collected from the students. But such accounts are operated by the Secretary to the Governing Body and there seem to be several instances of diversion of such funds for unauthorised purposes.

3. Sizeable sums of scholarships to students awarded by the State and Central Governments are channelled through the colleges. In some cases it appears doubtful whether such sums have been duly paid to the proper individuals by the colleges.

Personnel Recruitment of College Teachers and their service conditions

As the Academic Standards of a college depend upon the quality of the teachers, the University prescribed the minimum academic qualifications of teachers to be appointed by the colleges.

"In making new appointments preference should be as a rule be given to a candidate of higher qualifications than lower, the idea being that the staff of a college should function at the highest level of efficiency both for teaching and research". It has been recommended that in the "recruitment of teachers in the affiliated colleges, the University should be associated in an effective way so as to ensure that all recruitment is made mainly on academic considerations."

The college teachers are recruited by the Governing Body at the place of the college. The University and the State Government send their representatives to sit on the Governing Body of the College in order to ensure that the university's standards are complied with by the College. In practice various non-academic considerations seem to be influencing the recruitment of college teachers. The University appears to be merely maintaining close association, with the process of recruitment whereas the governing Body of the college is achieving effectively its own goals.

The university expects and prescribes that the college teachers should have good service conditions. The prevailing practice is not encouraging in this respect.

(i) In several colleges, a high proportion of teachers are maintained on a temporary basis. Temporary teachers are terminated during the summer vacation as they may be reappointed when the college reopens after the vacation.

(ii) Salaries are not paid regularly to teachers even when the State Government has disbursed advance teaching grant to the colleges.

(iii) The physical conditions of college teaching—over-crowded classes, heavy teaching load for most teachers—preclude quality instruction.

The unhealthy recruitment practices and service conditions and lack of scope for academic advancement cause frustration among the college teachers. They feel disesteemed by others. The University has to undertake the responsibility of bringing them near to the University teachers in terms of service conditions and emoluments and make them feel that they are part and parcel of the University organisation.

The Principal and College Administration

The Principal is the key person in the academic hierarchy of the college. He is appointed by the Governing Body. He is the chief executive of the college, carrying out the policies determined by the Governing Body. He also acts as a buffer between the Governing Body on the one hand and the University and the State Government on the other. He is responsible for scheduling classes, for determining the work load of teachers, for student discipline and for allocating finance within the limits set by the Governing Body. He creates much of the atmosphere of the College. He has the power to "press for academic distinction or to allow the college to decline in quality and morale".

The principal has to maintain a balance between the various pressures groups in the college—students, teachers and the Governing Body. The nature of his relationship with the teachers depends to a large extent upon his relationship with the Governing Body. If he enjoys a high degree of independence from the Governing Body, he is likely to be a respected leader of the teachers. It is to be noted that his personal advancement is in the hands of the Governing Body and his academic reputation and recognition in those of the university. The principal of a Government-owned college appears to be in a better position vis-a-vis his employers and the university than the principal of a privately owned college.

From the foregoing, it appears that the administration of the university-affiliated college system is suffering from the lack of control by the primary organisation of its secondary organisations. The university prescribes standards in respect of affiliation, finance and recruitment and service conditions of teachers of the affiliated colleges. But the standards are left to be enforced intermittently. Several of the colleges manage to operate with considerable deviation from the standards.

In this context, the Governing Bodies and principals of the private colleges have attracted much criticism. Most of the members of the Governing Bodies have little experience or knowledge of the functioning of a college. The Bodies are distinguished neither by the expertise of their members nor their educational vision. Their 'whole attitude is commercial; the teachers are hired hands; the commodity they sell is education and the customers are students'. In many cases, the Governing Body interferes with the day-to-day management of the college thus eroding the authority of the principal. In appointing

the principal the Governing Body tries to appoint or promote those who will be subservient to its wishes. Principals are "not selected for their scholarly qualities or initiative; rather they are chosen because of their ability to wield authority and follow management's directives."

The university's inability to control the colleges is detrimental to itself, to the students and teachers of the colleges and to higher education in general. What can the university do to ensure that the colleges operate fully in line with the standards prescribed? The law which governs the university may not be clear as to the action to be taken by it. The use of the drastic measure of disaffiliation is no solution, it causes more hardship to the students and teachers of the college in question than to its management. Recently, the Andhra University has suggested that a provision be made in the University Act empowering the University's Syndicate to issue direction to a college which is fond to be deviating from the standards of the university and to supersede its management if it did not comply with the direction issued. But instead of attempting to control the college after it deviates from the standards, it is desirable that the university should institute administrative controls which do not allow the opportunity for the college to deviate. In order to ensure maintenance of standards and proper development of colleges, a suitable machinery may be evolved in the university.

We suggest that there should be two officials of the University—the Academic Adviser and Financial Advisor to affiliated colleges—exclusively meant for administering the colleges. The Academic Adviser to the affiliated colleges should be appointed by the University for the purpose of performing, subject to the control of the Vice-Chancellor of the University, function of both development and control in relation to the colleges. His functions may be on the following lines:

(i) The Academic Adviser will make periodical inspection of all the private affiliated colleges within the university area, and prepare periodical reports to be submitted to the university authorities.

(ii) He will find out any deviations from the prescribed physical and academic standards on the part of any college and bring them to the notice of the Vice-Chancellor.

(iii) He will publish the academic handbook of all the colleges containing information on their historical background, courses of study offered, the existing library and laboratory facilities, strength of students and staff, the civil list of teachers, etc.

(iv) He will prepare a five year plan for every college within the

framework of the national plans containing projections regarding student enrolment in the various courses of study the requirements for physical facilities like buildings, laboratories, libraries and playgrounds, teaching staff and teacher improvement schemes.

(v) He will provide guidance to the colleges for solving academic problems.

(vi) He will help arrange research guidance to those college teachers who wish to improve their qualifications.

(vii) He will help arrange co-operative teaching by university teachers in those branches of study where the colleges have deficiency.

(viii) He will act as a liaison officer between the University and the colleges in operating college improvement programmes like summer institutes and refresher courses.

The standards of education are inseparably related to the availability and proper management of funds for the establishment maintenance of colleges. The Governing Body of the private College may not be aware of the procedures (prescribed by the University and the State Government) governing the use of the college finances. The Financial Advisor should work directly under the control of the Vice-Chancellor of the University. He will offer advice to and control the colleges in their amnagement of finances. The functions of the Financial Advisor to the affiliated colleges may be on the following lines:

(i) He will make periodical inspection of all the colleges and submit to the University and the State Government reports on the financial aspect of the working of the college.

(ii) He will publish a financial handbook of all the colleges containing information regarding the required and exisiting capital fund, general and special funds, the grants made to them by the State Government and the U.G.C. and how much grants have been utilised by them etc.

(iii) He will require the colleges to submit proposals for the next financial year giving details of the likely working deficit which may be made good by the State Government. He will send these proposals with his comments to the State Government.

(iv) He will prescribe the types of accounts to be maintained by the Colleges along with the procedure.

(v) Any proposal by the Colleges involving capital expenditure involving any deviation from the original proposal should be submitted to the Financial Advisor who will scrutinise such proposals and send

them to the university and the State Government along with his comments.

(vi) He will help the colleges in expediting the grant and disbursement of maintenance grants by the State Government so that the teachers may be paid their salaries regularly.

(vii) The Vice-Chancellor may seek the opinion of the Financial Advisor before recommending to the State Government and the U.G.C. any proposal of financial assistance to the colleges. The Vice-Chancellor can overrule the views of the Financial Advisor. The Vice-Chancellor has the right of recommendation for grants to colleges; the State Government and U.G.C. have the right of sanctioning the grants and the Financial Advisor has the right of inspection and control over the colleges as to the way in which the grants have been utilised.

To sum up the university and its affiliated colleges are considered the primary and secondary organisations in the system of higher education in India. Within this system, the management of the colleges is decentralised while control of the colleges is centralised in the hands of university. The university prescribes the standards of performance to be fulfilled by the colleges. It appears that the colleges operate with considerable deviation from such standards. The existing administrative machinery of the university attempts to control the colleges only after they have deviated from the standards. To enable the university to prevent such deviations on the part of the colleges new devices of administrative control are suggested.

The Research Function of the University

N.O.H. SETIDISHO

Introduction

This paper is written against the background of the university in Botswana and personal experiences of the author both in Botswana and in other parts of Africa. The paper accepts that the university has three main functions, namely, teaching, research and service to the community. The main thrust of this paper is to focus attention on current attitudes to research within the university and the probable place of research by the year 2000 and later. The context against which this paper should be read is that of a university in a developing country and more particularly, the third world countries of Africa.

Recognition of Research

A major objective of the university is the training and production of manpower for the country, and this is an implicit acceptance of the teaching function of the university—since no training can take place unless there is teaching. By the same token, teaching and training can only be relevant if there is an on-going programme of research within the country which seeks to provide the university with relevant teaching materials. Also, if the university is to be of direct assistance to the government, the parastatal and private sector, it must have an interest in research.

Within the university, research has always been recognised as a proper function of the institution; in government, it is accepted that research is essential if meaningful decisions are to be taken regarding the development activities of the nation. However, many government officials appear to be unwilling to use the services of the university for this purpose, since they argue that university teachers tend to engage only in "academic research" which cannot be helpful in any way in the solution of the present day problems of the country.

Dedication of University to Research

The university is dedicated to research, both fundamental and applied. It recognises that priority must be given to research into local problems that will contribute to the amelioration, in particular, of the life of the ordinary man and the rural poor. It is general policy that emphasis should be placed on such topics as : rural health, the problems of poverty in its varying contexts, the conflicts of cultures in multi-ethnic societies and the basis for unity and social harmony, agriculture and rural development.

The university believes that the policy and decision-making authorities are aware of the need to base their policies and decisions on realistic information provided by researchers within the country. The university is there to carry out some of the research and so should be asked to assist the government and others who need basic data for their operations. The university should not only be required to train the high and middle-level manpower, but it must also be involved in all the development activities of the nation. When and if necessary it must be strengthened in order to enable it to operate more effectively in order to justify the very high investment in university education.

Balance Between Fundamental and Applied Research

A general policy of the University in a developing country is that research should be aimed at the most pressing needs and to that end should have a strong bias towards applied research, but not to the exclusion of fundamental research.

The cost of research is high. It takes time to produce results. First of all, only a small percentage of those who are trained to the Ph.D. level may turn out to be good research workers. Of course, they will do other things, but from the standpoint of research this means high educational overheads. For this reason, the tendency among the

researchers in the University is to pretend that every research project is successful and that no research is undertaken which does not produce results. After all, they must justify continued support and fear that if they were honest and admitted that much of the research carried on produces nothing, they might not continue to get support. Even good research workers cannot produce significant results if they are overloaded with teaching and other duties. Yet this is likely to be the case if the resources of the university are small and it has to fight to keep enough staff members to handle all of its students. Raymond Hughes, former President of Miami University and Iowa State College, says:

Why is not more research carried on in the independent liberal arts college. In the first place there is too little time. In a college year of nine months exclusive of Sundays there are about two hundred and thirty-five days. At eight hours a day a man has 1,890 work hours. After teaching twelve to fifteen hours a week, and attending conscientiously to his other college duties, how can he find time for 1,500 hours of research? If he produces one paper over a period of three to four years, is that sufficiently inspiring to hold him at work? Usually, he would be unable to secure the funds for essential equipment and other expenses. Also, the library of such a college would be inadequate for his needs. We must conclude that research is impossible for 90 per cent of the staff in our average independent college.

Many universities of the developing world and more particularly Africa do not receive adequate funds which would enable them to carry out research. Such universities normally depend on their national governments for their recurrent budget operations and these include university research programme activities. There is a general lack of confidence in University research. All too often research is carried out by individual university teachers and is rarely ever directed at the practical problems of society.

While national governments have always accused the universities of engaging in useless basic research, both the government, the private and parastatal sectors of the economy have generally demonstrated an unwillingness to commission local universities to carry out appropriate research. Perhaps, the universities themselves have not demonstrated sufficiently, their interest in applied and policy-making research programme. Through a deliberate research policy, it is hoped

that by the year 2000, many universities of the third world will have developed balanced research programmes in fundamental and applied research.

Problem of University Research

If the universities are to be engaged in meaningful programmes of research, they will need to:

1. Identify meaningful programmes of research and to liaise with all other research agencies within the country: research programmes will need to be coordinated.
2. Raise funds, nationally and internationally, for its research programmes. Research projects have to be justified in terms of their academic significance and probable application to the problems of the community.
3. Persuade governments, parastatal and private sectors to use universities more than has been the case hitherto. This necessarily entails a great deal of discussion with all the agencies that have an interest in research.

An Institute of Research

Many countries usually have a number of organisations engaged in research and the University tends to be regarded as an instrument for fundamental research, and although such research is not only important, but also necessary, yet those who provide finance for research, do not give top priority to this kind of research activity. Thus universities have to strike a happy mean between fundamental and applied research. They also have to struggle to gain the confidence of the consumers of their research findings.

In order to ensure that the Universities involved themselves significantly in a programme of research which is directed towards the real problems of development, they have established Institutes of Research. While their objectives have been the same, nevertheless, there are variations from country to country which are a function of the identified needs of the particular country. The Institutes established in this way are an integral part of the university and the main objective has been to support development and policy oriented research. The Research Institute has a Director and a core of full time research fellows who are engaged for specific projects; in addition, the Institute will sponsor any research proposal is consistent with the Institute's

research objectives.

Research proposals are screened and approved by a Research Steering Committee, which in some cases consists of representatives of the various research consumer agencies. It is rather important for the Director of the Institute to maintain a record of all the research being carried out, and if possible, to keep a copy of all completed research work.

Research Priorities

It is considered important that university Research Institute should define their research priorities clearly and carefully and to provide a statement of their functions. This should help the universities in their search for research funds.

In general, research priorities may consist of project which:

- (a) contain a substantial training component of graduates and students;
- (b) are related to the education and training activities of the faculties and departments of the university;
- (c) are a part of a broad approach to development problem in the country;
- (d) have a multi-disciplinary approach to development problem;
- (e) aim at improving the living conditions of the less privileged population groups and areas of the country.

The functions of the research programmes to be carried out under the umbrella of the Institute may be:

1. To broaden the knowledge and understanding of the dynamics of development processes in Botswana and southern Africa in general.
2. To provide recommendations and advice relating to development issues and problems to the Government, the University and other public institutions.
3. To stimulate and coordinate the training of graduates and students in research.
4. To provide relevant teaching materials for the faculties and departments of the university.

The function concerning the Government includes two categories of research, namely:

research that is complementary to research being carried out by Government Bodies, and research that is anticipating

Government policies or that monitors the implementation of such policies in an independent manner.

Documentation Unit

There is ample evidence that, in the past few years, there has been a growing awareness of the importance of the establishment and utilization of documentation centres in Africa. This awareness emanates from the correct appraisal of a situation which can be circumscribed with questions such as: How do we cope with the extremely fast growing flood of development literature, research results and statistical data? How and to what extent do we utilize this information (in terms of research, decision-making) and finally, how and in what form do we learn about these materials and how do we go about selecting and retrieving the materials required? The answer to these questions have been sought in the rapid establishment of documentation centres, the organisation of workshops and conferences, the production of research directories, bibliographies and special documentation services. All the steps taken attempt to systematically collect, analyse, store, disseminate and utilize information, thus initiating and maintaining a transfer process from individual and institutional information producers to a variety of consumers, such as scholars, researchers, planners and decision-makers.

In the light of the above, it is believed that it would serve a useful purpose, if the universities could consider the establishment of Documentation units within their own Research Institutes. The overall objective should be to produce a systematic and comprehensive collection of information on current and planned research projects for the use of individuals and institutions concerned with research. More specifically, a Research Directory should be intended to serve as a manual which could be used for the coordination of research in various areas and subjects for the retrieval of relevant literature and for formulating a research policy.

Organisation of Research

The University has a unique opportunity to coordinate research and prevent the division of research organisation which exists in many countries. One function of the Director of the Research Institute in the University is to comprehend the whole research programme and to ensure that he has a record of all research done and in progress

throughout the whole country. Another of his principal tasks is to properly identify the research function and to ensure that it gets its fair share of resources which come to the University.

The Director of the Research Institute needs to be a man with vision and great understanding, a man who can coordinate the research staff and evaluate research programmes without directing and dictating. Good research efforts come from the minds of men and cannot be established or directed from above. Everyone in charge of research programmes, Head of the Departments, Deans of Faculties and the Director, himself, must remember this. One of the problems of the Director is to maintain good project records and exercise the right kind of direction and guidance without making the staff feel that he is infringing on their thought and functioning as research workers. This is not easy but the alternative is not tenable (that is, research without direction). A prime function of the Director is to remove barriers and find resources. Another major task of the Director is to help see that research is focussed on the pressing problems of development, since after all, the prime objective of the university is to improve the lot of the rural people without discouraging basic research by making those elements of the university less directly concerned with development, feel they are strangers and out of place. This, too, is not easy, but it is extremely important. The promotion of inter-disciplinary research and the task force idea is another responsibility.

Basic versus Applied Research

There is an inherent danger in the attitude of those in government circles who are the strong proponents of the view that all research should be applied and who assume that all research work by university staff cannot relate to any of the basic problems of the country. Also, it is important to note that basic research is equally essential and the problem is that of balance.

Doctor M.B. Russell, Associate Director of the Agricultural Experiment Station at the University of Illinois, in the talk entitled, "Agricultural Research": The Challenge of Change" remarked that:

... the basic versus applied polemic is an unproductive semantic wasteland best to be ignored. What we need to more imaginative, creative, and productive research on problems significant to agriculture. We have unique responsibilities for work on problems and phenomena closely associated with the soil-plant-

animal ecosystem and the persons who are involved in the management of that system.

From this hard case of unique responsibilities the research domain blends outwardly into the continuum of the entire scientific universe and, therefore, has no nearly defined outer limits. We must, however, avoid deploying so much of our resources along the outer reaches of our domain that we have weak and unproductive..

This states succinctly the best resolution of the age old argument about what is applied research and what is fundamental research. No university should be restricted by any statutory definition of its research effort. In some instances, government has attempted to confine the research activities of the university to those things which it is felt a professor ought to do as sideline to maintain his interest in teaching. Generally this restriction is attempted when government is trying to protect its own agencies already involved in an applied research effort. Nevertheless, this is not tenable, a university cannot live and grow and come to have meaning if there is any restriction on its research effort. It must, of course, live within its financial means but this should not operate to warp its research philosophy.

Doctor Tom Hamilton, formerly Associate Director of the Agricultural Experiment Station at the University of Illinois, in a paper tracing the history of the American agricultural experiment stations, pointed out that a lack of confidence in fundamental research at the University of Illinois prohibited a research worker at that institutions from continuing in his investigations on the development of inbred strains of corn, on the theory that the work was of no practical value so the young research workers went to another institution where he was permitted to continue his "impractical researches" leading, within a few short years, to the crossing of two of his strains of corn and the production of a hybrid variety which yielded the astonishing amount of corn per acre.

Projects

Research demands resources, and the allocation of resources always implied an explanation. Furthermore, those who handle the research funds must reach decision, often between many requests, and their final decision of which requests to honour must be supported by something more than fancy. A well-formulated research project should

provide essential information, and should help the research worker himself clear his mind and provide guidance as he carries on with the work. There has been some suggestion that a research project designated to meet the administrative need for budget allocations cannot at the same time serve as a good project outline for the research worker. Perhaps this means that the project submitted for administrative and budgetary purposes should not contain the detail which would be most helpful to the research worker himself. This can very well be an elaboration which he and others more intimately connected with the research endeavour itself will find useful. It has been suggested, also that the project system tends to stifle research. But what substitute is there? Perhaps what is really meant is that some project supervisors or research administrators stifle research. This does not suggest that the project approach cannot be misused. We know one institution where every professor or lecturer had a project the regulations required it. As a matter of fact, there was a provision about everybody spending at least 25 per cent of his time on research. Perhaps this should be put down as a noble but not very realistic effort to get meaningful research projects and to divide the time of members of staff. Paper research projects can look impressive if there is not too much probing behind the scenes.

The Research Work and Time Allocation for Research

Who should do the research? Anyone with the imagination, will, training and ability. Perhaps that is not a helpful answer but these attributes are fundamental. To a good research worker, time is relatively unimportant, and to his way of thinking, the project on which he is working is the most significant endeavour being carried on in his institution. This is the reason why many research workers view teaching as a distraction. It is also a reason why an arbitrary allotment of time between research and teaching, which is uniform for everyone, should not be made. In the university there is a place for the research worker who spends all his time teaching and for, hopefully, large number of staff members who are interested in doing both and who are able to let one activity complement the other. This is really what is meant by the integration of teaching and research. There is a point in insisting that the university teacher who is not interested in doing research engage in some trivial project just so that it can be said that he is carrying on research. It seems to be the nature of the academic

man, however, that most who teach would like to engage in meaningful research. This being the case, proper arrangements should be made and the head of every department should regard it as one of his prime duties to know his staff members and other capabilities so that they can be employed to the best advantage, both from the stand point of teaching and research. Often it is suggested that a research function should be added in a department or that those who are teaching should do research. Objections are raised on the grounds that this simply adds to the burden of the staff. This should not be so. The terms of employment should be such that each staff member understands approximately the amount of time he is expected to spend on research and on teaching. If this is understood and the department head performs his job in a satisfactory manner. No staff members should be required to accept more of an overload than any other staff member and, theoretically, there would be no overload. But a more obvious advantage in having the lecturer engage in research is what it does for his class. It provides a built-in mechanism, as it were, for bringing to the student the realism and stimulation which come from investigation, and performs for them the same function which extension workers should perform for the farming population and rural people.

Coordination with Other Research Agencies

There are government agencies which are engaged in specialised research programmes for the various ministries, and there is need for coordination and flow of information between these agencies and the University. Thus, the Director of the Institute for Research within the University is required to establish working relationships with all the research agencies in the country and help create a basis for mutual cooperation and sometimes even make arrangements for joint research projects.

From time to time, the university, through its Research Institute should organize seminars and workshops at which various researchers and research agencies present papers for information and discussion of their own researches: usually at the end of such a workshop or seminar, the institution should prepare and make available a report of the proceedings to all parties concerned and others who may be interested.

As a matter of routine, the Director of the Institute should have

constant meetings and discussions with the various Ministers involved in research and when necessary, a particular research agency should be invited to the meeting of the research institute steering committee. This usually helps to coordinate research activities.

Using the Results of Research

The use of research is to solve problems and to help the economy to make progress. This cannot be done unless the results of research find a way to the people who can use them. In part, this is a function of the education programme. However, research workers themselves owe some responsibility to put their results in a form that is meaningful to those outside their scientific area. This calls for co-operations between specialists and consumer government departments.

It is recommended that the university should seek to produce two kinds of publications: one should be a bulletin designed primarily for research scholars in the field and reporting the results of research pretty much in the language of the research worker, the other to be written for popular consumption and containing that which is useful for people engaged in the field. Both kinds of writing require people who are skilled and sensitive to the purpose.

Research next to teaching is an important function of the university. It is this function that makes the university distinct from other types and levels of educational institutions. There are two types of researches in which the university has an interest—basic research and applied research. Basic research seeks to understand what it is, how it is and why it is; whereas applied research pursues what can be and how it can be done. Both types of research are inter-dependent and must be conducted simultaneously. Today's technology would not have been possible had there not been a past evolution of basic research. On the other hand, later developments in science and technology have made possible more efficient further research into the basic facts and principles. Progress in the applied sciences has obviously brought advancement to basic research, but the latter is a prerequisite of the former. Together they have accelerated the process of industrialisation.

As one problem after another is solved, new problems are created by previous solutions. Some are consequences while others are side effects. Some are biological, while others are physical and chemical. Some are concrete, while others are abstract. Some are economic, while others are cultural and political. The list is inexhaustible. Thus, the

university should continue to promote both basic and applied research and should seek to maintain a healthy balance between the two.

Future Needs for Research

The University being accepted as the highest level training institutions for manpower and citizenship, must be perceptive of the future of its own society and the world at large. Furthermore, it must have a comprehensive understanding of its present and past situation. The University set up is primarily for academic purpose and spared other routine government activities, can study the whole perspective of the society and the world with a more reflective approach. The university prepares its students to manage the changes in life and to reconstruct the social order if necessary. This seems to assign the university the role of direct participation in national development, particularly in developing manpower, planning development programmes and cooperating with other agencies concerned in implementing the programmes.

The university should give the highest priority to conducting research project that are sponsored by or through the government. The major rationale is that research should be used to enrich knowledge in the subjects taught in the university. The future economic and social development of the nation depends upon the quality of its students. They should have access to up-to-date subject matter and be taught by educators who not only teach, but also carry out research related to the content of the courses they teach. In doing research, especially the applied type, university teachers familiarize themselves with the actual problems and processes of operations in the field, in business, and industry. This has proved to be an effective way of keeping abreast of the real world of experience and linking vicarious situations in the lecture rooms with real life ones. Such research should at least be conducted by lecturers in cooperation with personnel responsible for the work under investigation. With such cooperation, the projects would be more efficiently utilized by both the university in its teaching and the agency in its operation.

The less the development of a country, the greater is the need for research work in locating local resources and transforming them into forms useful to national development. Much more intensive research is needed in the sciences and technology.

Better way for bringing about desirable changes in the national

development process. Social research should include a determination of more effective methods of educating the people and preparing them for the way of life of a changing an industrial society without disrupting their mental and emotional balance.

Research into the history of economic, political and cultural development in depth and breadth is still desirable. New light might be shed on the origins and evolution of the society. Studies of customs and traditions of the people require long-range planning and execution to determine more accurately the trend of cultural change. This kind of information is necessary for preventing social and political calamities in the process of economic development.

As business and industry expand, problems in management will manifest themselves more clearly. As a result, labour unrest, conflicts between workers and managements, ineffective and inefficient production will emerge with increasing frequency and intensity. The governments will be called upon to intervene and to settle dispute. The governments and other agencies will need research information which will assist in taking meaningful decision.

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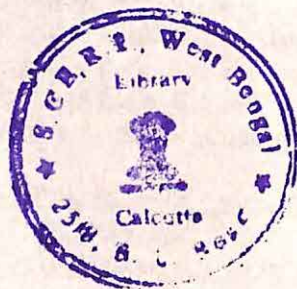
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